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CHILD-LIFE ARITHMETICS

GRADE THREE

By

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INTRODUCTION

An institution is said to be nothing more than the elongated shadow of a man. Modern arithmetic in America is the lengthened shadow of Warren Colburn. It was he who in 1821 broke the monopolistic fetters of adult standards in this subject and gave to us our first real text for children. Today the Colburn-Pestalozzi tradition lives on in undiminished force. In our thinking about methods it has lifted the psychological processes of the child to a place of equal importance with the mathematical processes of the subject.

In their work of several years on this series of texts, authors and publishers alike have placed the demands of childhood in the front rank of preferred claims. This will explain the upward gradation of certain major topics; the more gradual development of complex computational processes; the use of relatively small units with their pleasant variety, page unity, and short attention span; the meticulous elimination of unnecessary vocabulary and other linguistic difficulties; the systematic introduction of arithmetical processes in social situations familiar to children; the painstaking attempt to make the necessary technical terms meaningful on their first occurrence; the carefully phrased explanations of new arithmetical processes; the conspicuous presentation of generalizations following their development and preceding their application; the wide variety of projects, whose interest appeal is enhanced by hundreds of beautiful illustrations in three and four colors; the adjustment to individual differences by a scientifically organized program of diagnostic testing with remedial exercises keyed thereto; and the definite provision of enrichment for the ablest pupils.

These and other features of the books are the direct result of a sustained endeavor to smooth the way of the child to competence by a more natural and scientific approach. And such an endeavor reflects the basic aspiration of all instructional methodology.

THE AUTHORS

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CHAPTER 1

GETTING A START

Seeing and Adding Numbers

Coming to School

Paul and Mary are looking at the children coming to school. They are watching the children cross the street. A policeman blows his whistle to let them cross.

1. Frank and Arthur Baker and 2 other boys went across. How many boys are 2 boys and 2 boys?

2. Three boys ran across the street when the whistle blew. Three other boys ran after them. How many boys are 3 boys and 3 boys?

3. Mrs. Smith came in her car. She brought 3 boys and 2 girls. How many pupils came in Mrs. Smith's car? How many are 3 pupils and 2 pupils?

4. Miss Wilson is coming with 4 of her pupils and Miss Arnold is coming with 3 of her pupils. How many pupils are with these two teachers? How many are 4 pupils and 3 pupils?

We have been thinking and talking about numbers and adding numbers of pupils.

In the Schoolroom

The children came in groups. You saw them cross the street. A group may have only 2 or 3, or it may have more.

1. Mary watched the children in the schoolroom. They marched by 2's. She counted them by 2's this way: 2, 4, 6, 8, 10, 12. Can you count by 2's and find how many pupils are in the class?

2. Count your classmates by 3's. See if you can count by 3's and find how many pupils are in the class.

3. Dick counts by 5's. He counted nickels as 5 cents each, this way: 5, 10, 15, and so on, up to 50. Count by 5's to 50 for the class.

When Numbers Are in Order

In baseball the boys say, **first** base, **second** base, and **third** base. This is saying the numbers in their order. Counting is saying the numbers in their order, too.

4. What is the next day in the month after the third? After the tenth? After the nineteenth?

5. What day in the month comes just before the thirtieth? Just before the twelfth?

6. What is the day after September 5? The day before September 14?

7. Why is your grade called the third grade?

The Doll's Birthday Party

1. Elsie and Jane are giving a birthday party for June Marie, one of Elsie's dolls. Four of Elsie's dolls are there. Five of Jane's dolls came. How many dolls are at the party?

4
5
9

The numbers in the box are in a column. They are placed one above another. Add these numbers. Add from the top down. Add: 4 dolls and 5 dolls are 9 dolls.

2. Elsie has 6 tea cups for the dolls and Jane brought 3. How many tea cups are there?

6
3
9

Write the numbers in a column.
Add: 6 cups and 3 cups are 9 cups.
The sum of 6 and 3 is 9.

3. Write these numbers in columns and add them.

3 and 4 are 7 2 and 7 are 9 5 and 3 are 8

We add numbers to get the sum.

Adding Numbers in Columns

There are 5 exercises on this page. Read each example in these exercises two or three times. Read them this way, **2 and 3 are 5, 3 and 2 are 5.**

	A	B	C	D	E	F	G	H
1.	2	3	1	4	2	1	5	2
	3	2	4	1	1	2	2	5
	5	5	5	5	3	3	7	7
2.	4	2	5	1	1	7	7	2
	2	4	1	5	7	1	2	7
	6	6	6	6	8	8	9	9
3.	1	8	8	2	9	1	2	6
	8	1	2	8	1	9	6	2
	9	9	10	10	10	10	8	8
4.	4	3	1	6	3	7	3	6
	3	4	6	1	7	3	6	3
	7	7	7	7	10	10	9	9
5.	6	4	5	4	4	5	5	3
	4	6	4	5	4	5	3	5
	10	10	9	9	8	10	8	8

Now cover the sums and try to say them. Do you see that the sum of 2 and 3 is the same as the sum of 3 and 2? In adding two numbers you may say either number first. The sum is always the same.

Look at the examples and see how you write the sum 10. Where do you put the 0? The 1?

Things in Your Schoolroom

Find the answers in your schoolroom.

1. You often see 3 or 4 pupils standing or sitting together. That is a small **group** of pupils. Are the pupils in your room in groups?

2. Are the pupils in your class in groups at tables or in groups at their desks? Count the pupils in your group by 2's. Then count them by 3's.

3. Look at the group next to you. Is the number of pupils in that group larger or smaller than the number in your group?

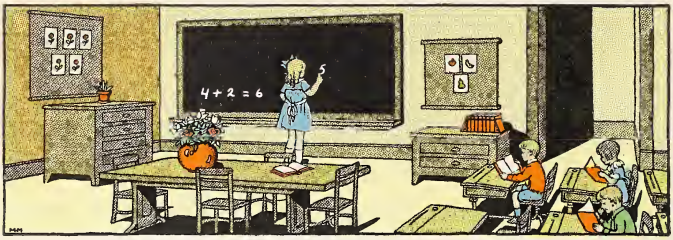
4. Are the windows in your room in groups? Add the number of windows in one group and the number in another group. What is their sum?

5. How many windows are in your room? Are some open and some closed? How many are open? How many are closed? Which is the larger number?

6. If the window panes in your room are in groups, how many window panes are in one of the groups? Does each group have the same number of window panes?

7. Find other groups of things in your room that are alike. Tell the class about these groups.

Adding numbers is called addition.



Betty's Schoolroom

When we add, we may use signs for some of the words. The sign for adding is +. Read it by saying **and** or **plus.** The sign = means **equals.** Read it by saying **are** or **equal** or **equals.**

Write each example about Betty's schoolroom in two ways. Then read it both ways.

1. The cabinet at the front of Betty's room has 4 drawers and the one by the door has 2 drawers. How many drawers are in both cabinets?

Read: 4 drawers and 2 drawers are 6 drawers

Read: 4 drawers + 2 drawers = 6 drawers

2. On the front wall are 5 pictures and on the side wall are 3 pictures. How many pictures are on both walls?

3. On the reading table Betty sees 2 red roses and 5 white roses. How many roses does she see?

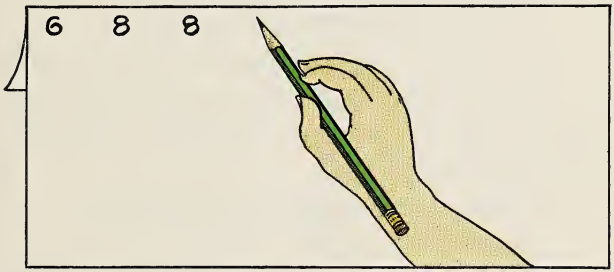
+ means add.	= means equals.

See if you can finish correctly in three minutes. Lay a paper below the first row of examples and write the sums. Do not copy the examples.

1.	6	2	4	3	4	1	1	3	3
	1	6	2	3	4	7	8	4	2

Now fold the top of the paper down and write the sums for exercise 2.

2.	2	7	6	5	7	3	2	2	2
	4	1	2	3	2	5	7	3	5



Fold the paper again and write the sums for exercise 3.

3.	1	8	5	6	4	5	3	4	3
	6	1	2	3	5	4	4	3	6

Your teacher will mark your paper. If you have any sums wrong, copy the examples you have wrong and make the sums right. Then say those examples with the right sums until you know them.

What Jack Saw

Take a paper and write what you say in adding the numbers in each of these problems. Use the signs. The first problem shows you how.

1. Jack likes to add numbers of things that he sees. One morning on the way to school Jack saw 3 airplanes and then 6 more airplanes. How many airplanes did he see?

3 airplanes + 6 airplanes = 9 airplanes

3 + 6 = 9

2. Jack met 5 boys who are in his class and 4 other boys. How many boys did he meet?

3. On his way to school Jack saw Tom's rabbits. There were 5 gray rabbits and 3 white ones. How many rabbits did he see?

4. At one of the street crossings Jack saw 5 automobiles waiting for the green light. Two automobiles were driving through on the other street. How many automobiles did he see there?

Getting Ready to Play Tossing the Ring

1. Draw a plan on the floor of your room for the game, Tossing the Ring. Make the lines in your plan like the lines in the picture.

2. Each part of the plan in the picture is a square. The sides of each part are equal and the corners are square like the corners of your room. How many of these little **squares** are in the plan for the game?

3. In each square in the picture you see a number. Put these same numbers in the squares in your floor plan. Be sure to get each number in the right square.

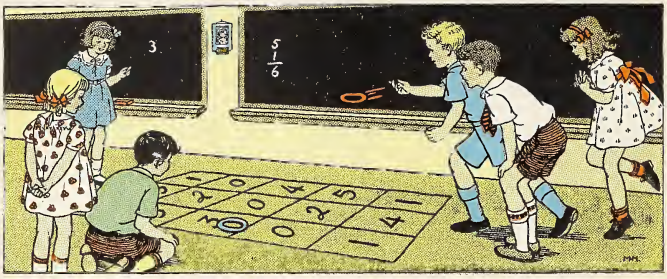
End

1	3	1
5	2	0
3	0	4
0	2	5
1	4	1

End

FLOOR PLAN

In Tossing the Ring each child has two throws. The ring should fall in one of the squares. The number in that square is part of the pupil's score. He throws the ring again. He now has the second number. He adds these two numbers. Their sum is his score in the game.



Tossing the Ring

Play the game, Tossing the Ring. Use the squares that you have marked on the floor.

Sometimes the ring will fall on one of the lines between squares. Have an umpire for the game. The umpire will tell which number to count.

Write your own scores in a column and add to see who wins the game.

1. Jack and some other children played this game. On Jack's first throw the ring fell on the space marked 3. On the second throw it fell on the space marked 0. **0** is read **zero**. It means **none**, or **nothing**. Jack's score was 3 because he had 0 to add to the 3. His score was →

3
0
3

0 means none.

2. On Mary's first throw the ring struck the space marked 0. On her second throw it struck the space marked 5. Mary had 5 to add to the 0 she got the first time. She wrote her score →

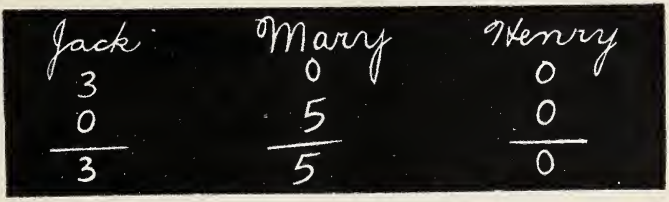
$$\begin{array}{r} 0 \\ 5 \\ \hline 5 \end{array}$$

3. Henry threw the ring twice on the space marked 0. His score was zero because he did not get anything on either throw. Henry's score was →

$$\begin{array}{r} 0 \\ 0 \\ \hline 0 \end{array}$$

0 added to 0 always equals 0.

4. Read the scoreboard for the first game.



5. Which of these children won the game? Who had the largest score? Who had the smallest score?

6. What is your score if you throw the ring and it falls on 4 and then on 0?

0 added to 4 equals 4. If zero is added to a number, the number is not changed.

Who Won?

1. Add to find the scores made in each of the other games.

SECOND GAME			THIRD GAME			FOURTH GAME		
Jack	Mary	Henry	Jack	Mary	Henry	Jack	Mary	Henry
1	5	0	5	0	3	2	0	4
0	3	3	4	4	0	5	5	5

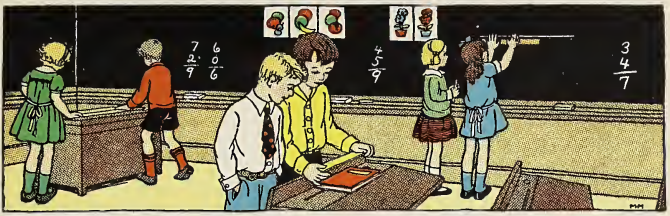
2. In the second game what was Jack's score? What was Mary's score? What was Henry's score?

3. Who won the second game? Who won the third game? The fourth game?

4. Who had the smallest score in the second game? In the third game? In the fourth game?

Look at each example and say the sum quickly without saying the numbers to be added.

	A	B	C	D	E	F	G	H	I
5.	0	4	5	6	2	0	5	2	3
	1	3	2	0	6	3	4	0	3
6.	3	7	1	0	3	7	5	0	4
	0	2	9	5	4	0	5	4	5
7.	0	8	2	4	0	6	0	3	0
	8	1	4	0	6	3	7	5	9
8.	9	0	0	3	5	8	1	2	6
	0	2	0	6	0	0	0	5	2



Measuring Things in the Schoolroom

1. Can you find something in the room which you think is 1 yard long? Measure it with the yardstick. Is it longer or shorter than a yard?

2. Find things in the room which you think are 1 foot long. Measure them with your foot rule. Are they longer or shorter than a foot?

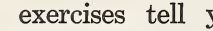
3. Without a ruler, draw on the board a line that you think is just 1 yard long. Measure your line with a yardstick to see how nearly right your line is. Make it exactly 1 yard long.

4. Try to draw on the board a line 1 foot long. Measure with the foot rule to see how nearly right your line is. Make it exactly 1 foot long.

5. Try to draw on the board a line 2 feet long. Measure with the foot rule to see how nearly right your line is. Make it exactly 3 feet long. Now measure this line with a yardstick. Do you see that 1 yard is equal to 3 feet?

Using the Ruler to Measure Things

These exercises tell you more about feet and inches. They will help you to know how to measure things.

1.  Into how many parts has this line been marked off? The line is 2 inches long. Each part of it is 1 inch long.

2. This line is 3 inches long. Into how many parts has it been marked off? Each part of the line is 1 inch long.

3. We can measure inches with the foot rule. Look at your foot rule. The heavy lines show the inches. How many inches does the rule show?

12 inches = 1 foot 12 in. = 1 ft.

4. Do you see that the inches are numbered on the ruler? What does the figure 1 on the ruler mean? 5? 6? 10? 11? 12?

5. How many inches long are these lines?

(a) _____

(b) _____

(c) _____

(d) _____

(e) _____

Using the Ruler to Measure Things

1. Use a foot rule and find how many inches long these things are.

(a) Your pencil
(b) Your arithmetic
(c) Your paint box
(d) Your music book
(e) Your reader
(f) Your speller

2. Without using a ruler, try to draw a line just 4 inches long. Now measure the line. Is it longer or shorter than 4 inches? Make it just 4 inches long.

3. Without a ruler, try to draw a line 6 inches long. Then try to draw a line that is 10 inches long. Measure the lines. Are they too long or too short? Make each line as long as it should be.

4. Use a foot rule and measure the yardstick. How many feet long is it?

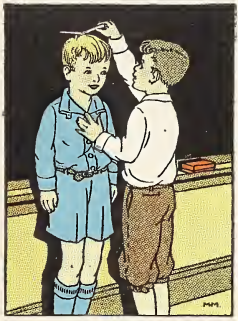
5. Look at the numbers on the yardstick. Can you tell how many inches long the yardstick is?

6. What does the number 15 on the yardstick mean? What does the 24 mean? 30? 31?

3 feet = 1 yard	36 inches = 1 yard
3 ft. = 1 yd.	36 in. = 1 yd.

How Tall Are You?

We often use feet and inches together when we tell how long something is or how tall some one is.



Edward measured John to see how tall he is. John stood with his back to the blackboard. Just as high as the top of John's head, Edward made a mark on the board. Edward measured to see how many feet it is from the floor to the mark. He found it is 4 feet and a little more. He held the rule up just below the mark and saw that the "little more" is 2 inches. Edward said, "John is 4 feet and 2 inches tall."

1. Find how tall the pupils in your class are. Each of you may measure a classmate. Tell in feet and inches how tall the classmate is.

2. How tall is the tallest pupil in the class? How tall is the shortest one?

3. Measure these things and tell in feet and inches how long they are.

(a) Your desk
(b) The window sill
(c) The teacher's desk
(d) A book shelf
(e) A board in the floor

KNOWING THAT YOU KNOW

Write the sums on paper. Fold the paper for each row.

1.	3	3	9	4	6	3	6	5
	7	3	1	5	4	6	2	3
2.	3	1	2	6	0	4	2	5
	4	0	7	3	7	6	8	2
3.	8	2	0	1	7	5	7	3
	2	4	5	9	2	4	3	4
4.	4	5	2	0	1	6	1	2
	6	3	7	4	9	2	7	5
5.	2	5	6	1	8	3	2	6
	6	4	3	6	2	5	0	4

Add 3 to each of these numbers. Say 6, 10, 3.

6.	3	7	0	4	1	6	5	2

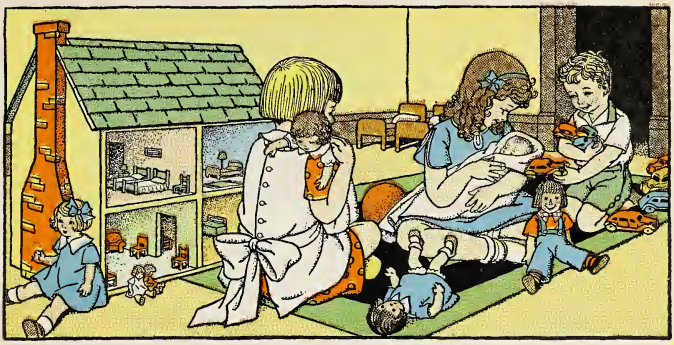
Write the sums on paper.

7.	5	6	4	2	0	7	4	6
	4	0	4	3	5	0	2	1
8.	5	3	4	9	2	1	3	5
	2	3	3	1	5	7	2	5

Your teacher will mark your paper. If you have any sums wrong, say those examples and the correct sums until you know them.

Copy these exercises. Put the missing numbers in the blank spaces. Then look at this page in the book and say the missing numbers quickly.

1.	0	0	1	1	0	2	1	2
	0	1	0	1	2	0	2	–
	0	1	1	2	2	2	3	3
2.	0	3	2	3	1	4	0	3
	–	–	2	–	–	–	–	2
	3	3	4	4	4	4	4	5
3.	–	–	–	–	–	3	4	2
	3	1	4	0	5	3	–	–
	5	5	5	5	5	6	6	6
4.	5	1	6	0	3	4	5	2
	–	–	–	–	4	–	–	–
	6	6	6	6	7	7	7	7
5.	6	1	7	0	4	5	3	6
	–	–	–	–	4	–	–	–
	7	7	7	7	8	8	8	8
6.	2	7	1	8	0	4	5	6
	–	–	–	–	–	5	–	–
	8	8	8	8	8	9	9	9
7.	–	7	–	8	–	9	–	
	–	–	–	–	–	–	–	
	9	9	9	9	9	9	9	



The Girls' Playthings

1. Ruth and Helen have 7 dolls. They want to give 4 of them to their little cousins, Jane and Bernice. How many dolls will they have left? How many are 4 dolls from 7 dolls?

2. The girls had 5 doll beds. They gave away 2 of them. How many are left? Two doll beds from 5 doll beds are how many doll beds?

3. Six chairs were in the doll house. Carl wanted 4 of the chairs. How many doll chairs would that leave for the doll house? Four chairs from 6 chairs are how many chairs?

4. Carl gave 6 of his 8 little cars to the girls for the chairs. How many cars did that leave for Carl to play with? Six cars from 8 cars are how many cars?

Looking Over the Books

The third grade children counted the books in their corner library. They made this list.

9 Story Readers	(4 badly worn)
7 Animal Story Books	(5 badly worn)
8 Robinson Crusoe Readers	(2 badly worn)
6 Indian Stories	(3 worn)
7 Poems for Children	(3 worn)

The children put all the worn books in a box to be taken away. Miss Ross asked these questions.

1. You had 9 Story Readers and took away 4. How many Story Readers are left?

$$\begin{array}{r} 9 \\ 4 \\ \hline 5 \end{array}$$

To find how many Story Readers were left, the children said, Take 4 from 9.

Write the numbers in a column. Put the larger number above.

Think, 4 from 9 leaves 5. Write 5 under 4.

There are 5 Story Readers left.

When we take one number from another, we subtract.

2. You had 7 books of Animal Stories and took away 5. How many of these books are left?

To find how many are left, the children said,
Take 5 from 7.
Write the numbers in a column. Put the larger number at the top.
Think, 5 from 7 leaves 2. Write 2 under 5.
There are 2 books about animals left.

The children made more problems. Read them and say the right number in each blank.

3. We counted 6 books of Indian Stories and took away 3. How many books of Indian Stories are left?

To find how many books are left, subtract 3 from 6. 3 from 6 leaves ____.
There are ____ books of Indian Stories left.

4. We had 7 books of Poems for Children. We took 3 away. How many books of poems are left?

3 from 7 leaves ____.
There are ____ books of poems left.

5. There were 8 Robinson Crusoe Readers. We took away 2 of them. How many are left?

2 from 8 leaves ____.
There are ____ Robinson Crusoe Readers left.

To find how many are left, we subtract.

Look at the first example. Say **4 from 5 = 1.** Read all the examples in this way three or four times. Then cover the answers and say them.

1.	5	4	4	4	5	5	6	6	6
	4	2	1	3	1	2	5	1	2
	1	2	3	1	4	3	1	5	4

The number left is called the remainder.

Read and say the remainders.

2. 4 from 5 = ____ 1 from 5 = ____ 2 from 5 = ____
3. 2 from 4 = ____ 2 from 3 = ____ 5 from 6 = ____
4. 3 from 4 = ____ 1 from 6 = ____ 2 from 6 = ____

Read these exercises two or three times. Then cover the remainders and see if you can say them.

	A	B	C	D	E	F	G	H	I
5.	5	8	9	5	7	8	6	6	7
	3	7	8	1	3	4	3	4	6
	2	1	1	4	4	4	3	2	1
6.	7	8	7	9	7	8	9	9	9
	5	6	1	6	2	1	5	1	6
	2	2	6	3	5	7	4	8	3
7.	8	8	9	7	9	9	8	9	9
	5	2	3	4	2	4	3	7	5
	3	6	6	3	7	5	5	2	4

Making Problems in School

The children in Miss Hann's room made problems asking how many are left. Read each child's problem and tell the correct answer.

In these problems the numbers are written as words. You may write them as figures.

1. Dick. I had eight cents this morning, but I spent four cents for candy. How much money do I have left?

2. Jim. I had six marbles in my pocket this morning, but I have lost four. How many marbles does that leave me?

3. Tom. I found nine eggs in the barn yesterday. We used six of them this morning. How many do we have left?

4. Jane. There are eight children in my reading group. Two are absent today. How many of my group are here?

5. Alice. Our lesson has nine examples in it. I have copied five of them. How many have I left to copy?

Make some problems for your classmates.

1. Copy these subtraction examples and write the remainders.

6	3	5	6	4	3	9	2	5
1	2	3	4	1	1	3	1	4
—	—	—	—	—	—	—	—	—

2. Read the examples on your paper. Begin reading like this: **1 from 6 equals 5.**

3. Now read the examples on your paper another way: **6 minus 1 equals 5.**

4. Copy these examples. Write the remainders.

8	6	9	8	8	5	7	7	5
1	2	5	6	4	5	4	5	2
—	—	—	—	—	—	—	—	—

5. Read each example in exercise 4 in two ways. Begin, 1 from 8 equals 7; 8 minus 1 equals 7.

The Subtraction Sign

6. The sign $-$ means subtract. When we use the sign, we write 8 minus 1 in this way, $8-1=7$. Read the sign by saying **minus.**

Read: 8 minus 1 equals 7
Read: 8 $-$ 1 $=$ 7

7. Read and give the remainders. Then write the examples, using the sign. Read the examples written with the signs.

9 minus 4 7 minus 3 8 minus 2 9 minus 6

The School Supply Store

In our school supply store two pupils kept a record of the things that were taken out in September and October for the pupils to use.

Record Sheet

Taken Out in September	Taken Out in October
7 packages notebooks	5 packages notebooks
8 boxes paint brushes	3 boxes paint brushes
2 boxes erasers	0 boxes erasers
4 boxes pencils	4 boxes pencils
0 boxes penholders	0 boxes penholders

1. The school took out 7 packages of notebooks in September and 5 packages in October. The difference between 7 packages and 5 packages is 2 packages. It may be written in three ways.

5 from 7 = 2 $\qquad$ 7 − 5 = 2 $\qquad$ $\begin{array}{r} 7 \\ 5 \\ \hline 2 \end{array}$

2. In September the school took 8 boxes of paint brushes and in October 3 boxes. The difference is 5 boxes. It is written

3 from 8 = 5 $\qquad$ 8 − 3 = 5 $\qquad$ $\begin{array}{r} 8 \\ 3 \\ \hline 5 \end{array}$

To find the difference between two numbers, subtract the smaller number from the larger number.

1. In September the store gave out 2 boxes of erasers and in October it gave out none. The difference was 2 boxes.

0 from 2 = 2 $\qquad$ 2 − 0 = 2 $\qquad$ $\begin{array}{r} 2 \\ 0 \\ \hline 2 \end{array}$

When we subtract 0 from a number, we have the same number left.

2. The store gave out 4 boxes of pencils in September and 4 boxes in October. Was there a difference?

4 from 4 = 0 $\qquad$ 4 − 4 = 0 $\qquad$ $\begin{array}{r} 4 \\ 4 \\ \hline 0 \end{array}$

When we subtract a number from an equal number, we have 0 left.

3. The store gave out no penholders in September and none in October. Find the difference.

0 from 0 = 0 $\qquad$ 0 − 0 = 0 $\qquad$ $\begin{array}{r} 0 \\ 0 \\ \hline 0 \end{array}$

0 from 0 leaves 0.

4. See if your classmates can say the difference in each line in the record sheet on page 25.

Read these examples three or four times. Then cover the remainders and try to say them correctly.

	A	B	C	D	E	F	G	H	I
1.	4	5	1	6	7	8	9	3	2
	0	0	0	0	0	0	0	0	0
	4	5	1	6	7	8	9	3	2
2.	0	4	3	2	9	6	5	7	8
	0	4	3	2	9	6	5	7	8
	0	0	0	0	0	0	0	0	0

Read and say the remainders.

3.	0 from 9 =	6 from 6 =	0 from 4 =
4.	3 from 3 =	0 from 8 =	5 from 5 =
5.	9 from 9 =	0 from 7 =	2 from 2 =
6.	0 from 6 =	0 from 8 =	7 from 7 =

Write the remainders on paper.

7.	4	5	1	6	7	8	9	3	2
	0	0	0	0	0	0	0	0	0
8.	5	2	3	9	6	4	7	8	0
	5	2	3	9	6	4	7	8	0

Answer and remember.

(a) When you subtract a number from an equal number, the answer is always _____.

(b) Zero from zero equals _____.

(c) Zero from any number leaves the _____ _____.

Getting New Books

The third grade had these books left on the shelves after the worn books were taken away:

5 Story Readers — 4 Poems for Children
3 Indian Stories — 2 Animal Story Books
6 Robinson Crusoe Readers

This third grade has two groups for reading. There are 9 children in each group.

1. Miss Ross said: We now have 5 Story Readers. How many more do we need so that each child in a group of 9 may have one?

$$\begin{array}{r} 9 \\ 5 \\ \hline 4 \end{array}$$

To find how many more are needed, the children said, Subtract 5 from 9.
5 and how many more are 9? 5 and 4 are 9.
We need 4 more Story Readers to make 9.

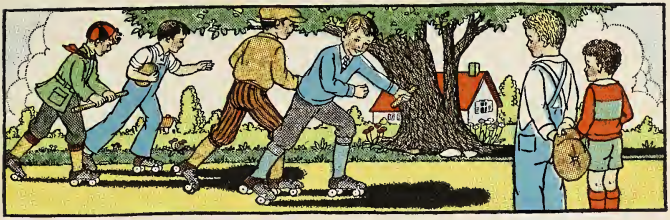
2. We now have 3 copies of Indian Stories. How many more do we need so that each child in a group of 9 may have one?

$$\begin{array}{r} 9 \\ 3 \\ \hline 6 \end{array}$$

To find how many more are needed, the children said, Subtract 3 from 9.
3 and how many more are 9? 3 and 6 are 9.
We need ____ more to make 9.

3. Make problems and find how many more of the other kinds of books are needed.

To find how many more are needed, we subtract.



Problems That Children Have

1. Six boys want to go roller skating. Only 4 of the boys have skates with them. How many more pairs of skates are needed?

2. Shirley wants to buy a doll that costs 3 dollars. She has 1 dollar. How much more money does she need to buy the doll?

3. Jack is earning money to buy an 8-cent book. He has 5 cents. How much more must he earn?

4. Each of the 8 children in Alice's row must have 1 sheet of drawing paper. She has 6 sheets for them. How many more sheets does she need?

5. Nancy may ask 8 friends to her party. She has asked 3. How many more may she ask?

6. Bob wants to buy an 8-cent kite. He has 4 cents. How much more money must he have?

7. There are 4 pieces of cake on the plate and 7 people at the table. How many more pieces of cake are needed for each person to have one?

Read and say the remainders.

1.	4 from 4 =	5 from 7 =	7 from 9 =
2.	0 from 0 =	3 from 8 =	2 from 2 =
3.	2 from 9 =	0 from 5 =	7 from 7 =
4.	8 from 8 =	6 from 6 =	0 from 8 =

5. Fred has 6 pennies and Tom has 4. What is the difference in the number of pennies they have?

6. Joan has 8 paper cut-out dolls and Patsy has 5 cut-out dolls. What is the difference between Joan's number of dolls and Patsy's number?

7. Tom can jump 8 feet and Frank can jump 9 feet. How much farther can Frank jump than Tom?

The answer in subtraction is called the remainder or the difference.

Say the remainders in each example quickly without saying the numbers in the example.

	A	B	C	D	E	F	G	H	I
8.	4	0	2	8	4	8	5	6	9
	4	0	0	8	0	3	0	6	7
9.	8	7	7	2	3	3	7	7	6
	0	5	7	2	0	3	3	0	0

10. What do we do to find how many are left?

11. What do we do to find the difference?

12. What do we do to find how many more are needed?

KNOWING THAT YOU KNOW

Copy and write the missing numbers. Think, **4 from 5 leaves 1. 2 from 4 leaves 2.**

1.	5	4	6	4	7	7	6	7	9
	−	−	−	−	−	−	−	−	−
	1	2	3	1	1	3	2	5	6
2.	9	8	6	7	8	9	8	5	2
	−	−	−	−	−	−	−	−	−
	7	1	4	2	6	8	4	0	2
3.	3	7	3	9	5	6	7	5	7
	−	−	−	−	−	−	−	−	−
	1	7	2	1	4	1	6	5	0
4.	9	8	9	5	5	7	8	9	8
	−	−	−	−	−	−	−	−	−
	9	5	2	2	3	4	0	5	2

Write the remainders on a folded paper.

5.	9	9	8	1	8	8	6	9	8
	4	6	4	0	5	3	2	7	8
	—	—	—	—	—	—	—	—	—
6.	7	8	6	7	9	4	8	8	7
	3	6	3	2	2	0	2	0	6
	—	—	—	—	—	—	—	—	—
7.	4	8	8	2	7	5	7	9	5
	3	7	1	2	0	5	5	5	0
	—	—	—	—	—	—	—	—	—

Your teacher will tell you if you made mistakes. Say those examples with the right remainders.

Copy these exercises. Put the missing numbers in the blank spaces. Then look at this page in the book and say the missing numbers quickly.

1.	0	1	2	3	4	5	6	–
	0	1	2	–	–	5	6	7
	0	0	0	0	0	0	0	0
2.	–	9	1	2	3	4	5	–
	8	9	0	1	2	–	–	5
	0	0	1	1	1	1	1	1
3.	7	8	9	2	3	–	–	6
	6	7	–	0	–	2	3	–
	1	1	1	2	2	2	2	2
4.	7	–	–	3	–	–	6	7
	–	6	7	–	1	2	–	–
	2	2	2	3	3	3	3	3
5.	–	–	–	5	–	7	–	9
	5	6	0	–	2	–	4	–
	3	3	4	4	4	4	4	4
6.	–	6	7	–	9	–	7	–
	0	–	–	3	–	0	–	2
	5	5	5	5	5	6	6	6
7.	–	7	8	9	–	9	9	
	3	–	1	–	0	–	–	
	6	7	7	7	8	8	9	

Showing How Much

1. John filled two pint milk bottles with water. Then he poured the water from the two pint bottles into one quart bottle. The water filled the quart bottle. A quart equals how many pints?

2. Frank filled a quart bottle with water four times and poured the water into a gallon jar. The water filled the jar. A gallon is the same as how many quarts?

3. Use pint, quart, and gallon measures to help you answer these questions.

2 pints equal how many quarts?
4 quarts are the same as what larger measure?
1 quart equals how many pints?

4. Say the words that fill the blanks.

1 quart = _____ pints.
1 gallon = _____ quarts.

1. When you are at home, look at the jars and other things in the kitchen and try to tell how many quarts, pints, or gallons they hold. Then measure them by using milk bottles and see if you were right. Tell the class what you did.

2. Use quart and pint milk bottles to fill pails and jars with water. See how much they hold.

2 pints	(pt.)	=	1 quart (qt.)
4 quarts	(qt.)	=	1 gallon (gal.)

3. Copy each of the lines below and fill the blanks.

(a) 2 pints equal _____ quart.

(b) gal. is a short way of writing _____.

(c) pint may be written _____.

(d) 1 gallon equals _____ quarts.

(e) 1 qt. equals _____ pints.

(f) 2 pt. equals 1 _____.

(g) 4 quarts equal _____ gallon.

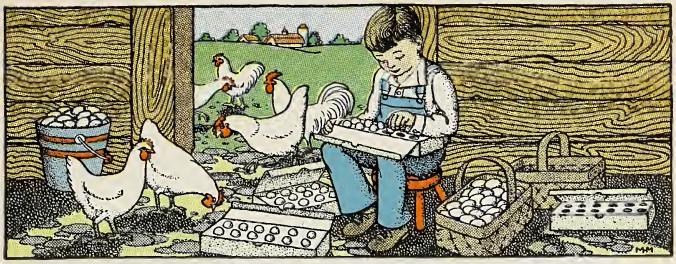
(h) quart may be written _____.

(i) pt. is a short way of writing _____.

(j) qt. is a short way of writing _____.

(k) gallon may be written _____.

(l) 1 gal. equals 4 _____.



Getting Eggs Ready for the Market

Bobby fills the egg boxes for the market.

1. How many eggs are in each box? Count by 1's.

2. How many long rows of eggs are in a box? How many eggs are in each row?

12 things	=	1 dozen (doz.)
6 things	=	1 half-dozen ($\frac{1}{2}$ doz.)

3. How many 6's are in 12? How many half-dozen are in a dozen?

4. How many dozen eggs will two of the long boxes hold?

5. How many eggs are in the shorter box?

6. How many rows of 3 eggs each are in the shorter box? Count these rows of eggs by 3's.

7. How many rows of 4 eggs are in the shorter box? Count these rows of eggs by 4's.

The School Post Office

The children in grade three had a school post office. When the post office opened on Monday, they counted the stamps. They had these stamps.

ONE-CENT STAMPS

TWO-CENT STAMPS

THREE-CENT STAMPS

FIVE-CENT STAMPS

1. How many five-cent stamps did they have?
2. How many one-cent stamps did they have?
3. How many two-cent stamps did they have?
4. How much did all the one-cent stamps cost?

5. How much did one long row of the two-cent stamps cost? Count the two-cent stamps as 2 cents each. Begin 2 cents, 4 cents, 6 cents.

6. How much did the five-cent stamps cost? Count the five-cent stamps as 5 cents each. Begin 5, 10.

7. How many three-cent stamps did they have? How much would one long row of three-cent stamps cost? Count.

After the post office closed, the children had to count the money they got for the stamps they sold. Here are pictures of the money.

PILES OF PENNIES NICKELS DIMES

8. How many piles of pennies did they have?

9. How many pennies were in each pile?

10. How many pennies did they have?

11. How many nickels were there?

12. How many cents are the nickels worth? Count each nickel as 5 cents.

13. How many dimes were there?

14. How many cents are the dimes worth?

What You Need for Halloween

You know how to find the cost of more than one stamp when the cost of each stamp is the same. We often buy more than one of some other things.

1. Halloween masks cost 5 cents each. Jane wants to buy 3. How much will 3 masks cost?

You remember that Dick added nickels as 5 cents each. To find the cost of 3 Halloween masks Dick would say, 5 cents, 10 cents, _____.

Add nickels Dick's way and tell how many cents Jane should pay for 3 masks.

2. Tom wants to make 4 paper witches riding small brooms. The brooms cost 3 cents each. Add by 3's to see how much the 4 brooms will cost.

3. Ned and Frank are cutting out paper cats for Halloween. The black paper sells at 2 cents a sheet. Add by 2's to find the cost of 5 sheets.

4. Make a Halloween problem in which you buy 2 things at 4 cents each. Find the cost by adding.

Sharing Things with Others

1. Harry wants to share his 8 tops equally with Frank. How many tops should he give Frank?

Harry puts 1 top in Frank's cap and 1 top in his own cap. He keeps on doing this until all the tops are in the two caps. How many are in each cap?

Harry knows the two halves of anything are equal. He sees there are 4 tops in each cap. He should give Frank 4 tops.

2. Julia has 4 dolls. She wishes to give Lucy one-half of her dolls. How many dolls should she give to Lucy? How many are one-half of 4?

3. Carl has 6 caramels. If he shares the caramels equally with Joe, how many caramels should he give to Joe? How many caramels will Carl have left? Why?

4. How can 2 boys share 3 apples equally? Can you make a picture to show each boy's share?

1. Write in order the numbers from 1 to 10.

2. Read these numbers written in words and see how they are written in figures.

ten	10	fourteen	14	eighteen	18
eleven	11	fifteen	15	nineteen	19
twelve	12	sixteen	16	twenty	20
thirteen	13	seventeen	17	twenty-one	21

3. Write these numbers in figures.

fifteen	thirteen	fourteen
eleven	nineteen	seventeen

4. Copy and finish each row of figures. Write the missing numbers.

21	—	23	—	25	—	—	28	—	30
31	32	—	—	35	36	—	—	39	—
41	—	—	44	—	—	47	—	—	—
51	—	53	—	—	56	—	58	—	—
61	—	—	64	—	—	67	—	—	—
71	—	—	—	75	—	—	—	—	—

A number written with two figures is called a two-figure number.

Finding the Pages in Your Arithmetic

The numbers on the pages in your book are in the same order as the numbers in counting. This is called number order.

1. On what page in this book do the lessons begin? What is the number of the next page?

2. Find page 20 in this book. What is the number of the page just before it? What is the number of the page just after it?

3. Find page 54 in this book. What is the page just before it? What is the page just after it?

4. Find page 35. Must you turn the pages toward the front or the back of the book to find page 27? Page 39? Page 17? Page 50?

5. Find page 73. Now do you turn toward the front or the back of the book to find these pages?

25 79 93 49 37 14 98 69 84 54

6. Try to open your book to the pages below. If you do not open at the correct page, tell which way you should turn to find it.

19 79 38 11 46 90 27 63 42 81

7. See how many minutes it will take you to find these pages in your book.

49 35 63 28 71 13 87 23 57 91

Begin reading, **5 and 8 are 13.** Read the other numbers the same way. Remember that no matter which number comes first, the sum of the numbers is the same. Read the examples and the sums three or four times. Then cover the sums and see if you can say them.

In each example the sum is a **two-figure number.** Tell how we write it to keep the column straight.

	A	B	C	D	E	F	G	H
1.	5	8	5	6	6	9	7	5
	8	5	6	5	9	6	5	7
	13	13	11	11	15	15	12	12
2.	6	4	7	7	3	7	9	7
	6	7	4	3	7	9	7	7
	12	11	11	10	10	16	16	14
3.	9	2	9	3	8	2	9	8
	2	9	3	9	2	8	8	9
	11	11	12	12	10	10	17	17
4.	8	4	9	5	3	8	7	6
	4	8	5	9	8	3	6	7
	12	12	14	14	11	11	13	13
5.	8	8	6	9	9	4	7	8
	8	6	8	9	4	9	8	7
	16	14	14	18	13	13	15	15

Getting Playthings for Children

Joe's father and Jim's father took their cars to help the Boy Scouts get playthings to give to children.

In these problems the numbers are written in words. You may write them in figures.

1. Joe got eight little trains. Jim got nine little trains. How many trains did the boys get?

8
9
17

Eight trains and nine trains are how many?
Write the numbers in a column.
Add down: $8+9=17$.
The sum is 17.
The boys got 17 trains.

To see if this answer is right, add the numbers from the bottom up.
The sum should be the same as before.
Add up: $9+8=17$.
The sum 17 is right.
This is called **checking addition.**

Find the sums, and check.

2. The two boys brought in five sets of building blocks and eight sets of A B C blocks. How many sets of blocks did they bring?

3. Joe got nine wooden animals and Jim got six. How many wooden animals did the boys get?

In the exercises below write the sums on a folded paper. Watch for zeros. Add down, then check by adding up. See if you can give all the sums correctly in 2 minutes.

	A	B	C	D	E	F	G	H	I
1.	5	0	8	8	7	5	8	2	5
	8	7	8	3	0	6	0	9	7
2.	9	9	7	9	3	9	9	0	8
	0	2	4	3	9	9	6	8	4
3.	7	5	0	4	6	7	6	0	6
	5	0	5	8	5	7	0	6	6
4.	4	7	7	8	9	9	0	5	3
	9	9	8	7	5	8	9	9	8
5.	7	4	8	6	9	8	3	9	6
	6	7	5	7	7	6	9	4	9

Mixed Review in Addition and Subtraction

The signs tell you what to do.

6.	5	7	3	6	9	4	8	6	6
	−3	−0	+8	+3	−0	+7	−5	+4	−4

If you had any answers wrong in the examples on this page, copy those examples and say the right answers until you know them.

Copy these exercises. Put the missing numbers in the blank spaces. Then look at this page in the book and say the missing numbers quickly.

1.	1	2	9	3	4	8	7
	9	8	1	7	6	2	3
	10	10	10	10	10	10	10
2.	6	5	8	3	7	4	6
	4	5	3	–	–	7	5
	10	10	11	11	11	11	11
3.	–	9	–	6	9	–	8
	–	–	–	6	–	–	–
	11	11	11	12	12	12	12
4.	–	7	–	7	–	8	–
	–	–	–	–	–	–	–
	12	12	12	13	13	13	13
5.	9	–	7	8	–	9	–
	–	–	–	–	–	–	–
	13	13	14	14	14	14	14
6.	9	–	8	–	8	9	–
	–	–	–	–	–	–	–
	15	15	15	15	16	16	16
7.	9	–	–				
	–	–	–				
	17	17	18				

KNOWING THAT YOU KNOW

This chart gives you all the 100 sums that you get when you add two one-figure numbers.

1. Sue wants to know the sum of 8 and 9. Help her find it on the chart. Find 8 in the black figures at the top. Find 9 in the black figures at the side. Now look across to the right from 9 until you find the red number 17 in the column under 8. 17 is the sum of 8 and 9.

Table of Sums

0	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

2. Find the sum of 6 and 7 on the chart.

3. Find the sum of 5 and 4. 7 and 8.

If you make mistakes in addition, find the right sums in the chart and say them four or five times.

Write sums on a folded paper. Number each row the same as the number of the exercise.

1.	8	4	8	7	6	8	6	8	7
	5	9	7	6	5	4	3	3	9
2.	9	7	9	3	4	8	5	9	5
	6	4	5	8	8	2	8	4	9
3.	9	3	8	9	8	6	3	7	6
	8	9	6	7	9	7	7	5	8

Check your sums. If you made mistakes in any of the examples, find the same examples in the chart on page 46. Say the sums until you know them.

Using the Table to Check Subtraction

You can use the table on page 46 for subtraction too. To subtract 6 from 14, find 6 at the top of the table. Then look in the red numbers below the 6 and find 14. Look to the left from 14 at the black figure 8. This shows you, 6 from 14 = 8.

Write the remainders on a folded paper.

4.	8	9	8	5	8	6	7	6	9
	5	7	8	2	6	3	0	2	2
5.	9	6	9	2	8	9	7	4	5
	4	4	3	0	2	5	4	0	3

Look on page 46 to see if your remainders are right. If you made mistakes, say the right remainders in those examples three times.

CHAPTER 2

LEARNING TO ADD AND SUBTRACT

Cent, Nickel, Dime, Quarter

Penny
1 Cent
1¢

Nickel
5 Cents
5¢

Dime
10 Cents
10¢

Quarter
25 Cents
25¢

Learning about United States Money

1. Which coin will buy the most?
2. Which coin will buy the least?
3. What coins together are worth 6 cents?
4. What coins together are worth 11 cents?
5. What coins together are worth 15 cents?
6. How many cents will buy the same as a dime?
7. How many nickels will buy the same as a dime?
8. How many cents are the same as a quarter?
9. How many nickels are the same as a quarter?
10. Say the right number for each blank:

2 dimes and _____ nickel will buy the same as a quarter.

_____ nickels will buy the same as 1 dime.

1 dime and _____ cents will buy the same as 14 cents.

1. Which will buy more:
A nickel, or a dime?
A dime and a penny, or a nickel and a penny?
A nickel and a dime, or two dimes?
2 dimes, or a nickel and a dime and a penny?
2 dimes, or a quarter?

> 1 nickel is the same as 5 cents.
> 1 dime is the same as 2 nickels or 10 cents.
> 1 quarter is the same as 5 nickels or 25 cents.
> 4 quarters equal 1 dollar, $1.

2. Copy. Use figures to show how these money numbers are written.

Six cents may be written 6 cents or 6¢
Five cents may be written ____ cents or ____
Ten cents may be written ____ cents or ____
Nine cents may be written ____ cents or ____
Fifteen cents may be written ____ cents or ____
Twenty cents may be written ____ cents or ____
Fourteen cents may be written ____ cents or ____
Twenty-three cents may be written ____ cents or ____

3. Can you add these? Be sure to write your sum like the sum in example (A). Check the sums.

A	B	C	D	E	F	G	H	I
3¢	5¢	8¢	9¢	7¢	9¢	6¢	5¢	8¢
7¢	8¢	7¢	4¢	9¢	3¢	7¢	9¢	6¢
10¢								

Making Your Own Problems

Add, and check the sums.

1.	9	8	4	7	4	8	8	5	9
	4	7	9	5	7	6	9	9	6
2.	9	5	6	6	9	5	7	8	7
	5	7	9	8	7	8	9	5	8

3. Louise made a problem about 3 from 8 leaves 5. She said, "I had 8¢. I bought a 3¢ stamp for mother's letter. How much money had I left?"

4. Make a money problem to show how much is left in each of these examples.

2 from 9 4 from 8 4 from 6

5. Bert made a problem about 4 from 7. He said, "I want to buy a top that costs 7 cents. I have 4 cents. How many more cents do I need?"

6. Make subtraction problems for these examples. Make your questions, "How many more are needed?"

5 from 9 3 from 7 5 from 8

7. Subtract.

2 dimes from 5 dimes = ____
3 dimes from 6 dimes = ____
5 dimes from 7 dimes = ____
2 dimes from 6 dimes = ____
4 dimes from 9 dimes = ____
3 dimes from 5 dimes = ____

2 from 7 = ____
2 from 8 = ____
7 from 8 = ____
3 from 9 = ____
6 from 9 = ____
5 from 9 = ____

Dorothy Learns How to Check Subtraction

1. Dorothy brought 6 oranges home from the grocery. Her mother used 4 of them the next morning. In school that day Dorothy tried to think how many oranges were still in the bag.

Dorothy thought: 4 from 6 = ____
4 oranges from 6 oranges = 2 oranges.
She was not quite sure. It might be 3.

$$\begin{array}{r} 6 \\ 4 \\ \hline 2 \end{array}$$

Ruth showed how to tell if the answer in subtraction is right. She said, "Add the number you took away and the remainder you have left. The sum should be the other number."

Was Dorothy's answer right?

This is called **checking subtraction.**

Write the remainders on a folded paper. Check each subtraction without using a pencil.

2.	8	7	9	5	6	9	4	8	7
	4	2	9	4	3	8	3	7	7
3.	9	5	8	5	8	3	7	9	9
	3	5	8	3	0	1	0	8	5
4.	7	9	9	7	8	9	8	9	7
	3	7	6	5	5	4	3	2	4

If you made any mistakes, copy the examples and say the right remainders until you know them.

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Have a timekeeper see how quickly you can say the answers in each exercise correctly.

1. Add 2 to each of the numbers below and give the sums.

5 1 7 3 6 2 8 4 9

2. Subtract 1 from each of the numbers below.

2 4 8 7 9 6 5 1 3

3.

6 and 2 =	0 and 9 =	4 from 5 =
5 and 3 =	6 and 0 =	2 from 7 =
3 and 5 =	4 from 9 =	3 from 9 =
7 and 2 =	3 from 7 =	1 from 9 =
5 and 4 =	8 from 9 =	5 from 8 =

4. Add.

8	9	6	4	8	6	5	0	2
9	7	5	6	5	8	9	4	8

5. Subtract 3 from each number below.

4 7 3 6 9 8 5

6. Add 4 to each number below.

2 5 3 1 6 4 8 9 7

7.

3 from 5 =	9 − 1 =	4 from 9 =
4 from 8 =	7 − 4 =	0 from 7 =
2 from 7 =	9 − 2 =	8 from 9 =
2 from 8 =	8 − 5 =	4 from 7 =
4 from 6 =	6 − 3 =	5 from 7 =

Keeping School Records

The third grade made a chart for the school each day. On the first day it looked like this.

	Boys Who Should Be Here	Boys Not Here	Boys Here	Girls Who Should Be Here	Girls Not Here	Girls Here
Kindergarten	11	3	8	13	4	9
Grade One	11	2	9	12	4	8
Grade Two	10	1	9	12	5	7
Grade Three	10	5	5	10	2	8
Grade Four	10	3	7	11	5	6
Grade Five	11	4	7	12	3	9
Grade Six	13	5	8	14	5	9

1. David read, "There should be 11 boys in the kindergarten. Three boys are not there. Eight boys are there. Eight is right, for 8 and 3 are 11." Read the other lines to your class.

The pupils made subtraction examples using the numbers on the chart. Below are the examples they made. Begin, 3 from 11 = 8, 4 from 13 = 9. Read the examples and check the remainders.

2.

11	13	11	12	10	12	10
3	4	2	4	1	5	5
8	9	9	8	9	7	5

3.

10	10	11	11	12	13	14
2	3	5	4	3	5	5
8	7	6	7	9	8	9

Read each example this way, **1 from 10=9.** Read all the examples three or four times.

Then read the same examples this way, **10—1=9.** Now cover the remainders and say them.

	A	B	C	D	E	F	G	H	I
1.	10	11	10	11	10	11	10	12	11
	1	8	5	4	6	6	9	3	5
	9	3	5	7	4	5	1	9	6
2.	11	10	11	10	11	10	10	11	12
	3	2	7	7	9	3	8	2	6
	8	8	4	3	2	7	2	9	6
3.	13	15	13	14	13	13	14	12	14
	8	6	7	7	9	4	9	5	6
	5	9	6	7	4	9	5	7	8
4.	12	14	12	14	12	13	12	13	10
	8	8	4	5	7	6	9	5	4
	4	6	8	9	5	7	3	8	6
5.	15	16	15	15	16	17	18	17	16
	7	8	9	8	9	8	9	9	7
	8	8	6	7	7	9	9	8	9

Review in Addition and Subtraction

The signs tell what to do. Check your answers.

6.	6	6	7	4	7	6	8	7	6
	+9	−0	−2	+8	−4	+5	−3	+4	−2

1. Add 2 to each of these numbers.

   2 4 1 5 8 3 6 9 0

2. Subtract 2 from each of these numbers.

   6 3 8 4 2 7 5 9

3.

Subtract	4 from 8 = ____	Subtract	Add
6	5 + 3 = ____	8¢	7
4	4 + 4 = ____	7¢	3
—	6 from 7 = ____	—	—
	6 and 5 = ____		

4.

3 from 9 = ____	3 take away 1 = ____
3 + 3 = ____	6 − 3 = ____
9 − 2 = ____	5 from 7 = ____
5 take away 2 = ____	6 + 3 = ____
2 + 3 = ____	8 + 3 = ____

5.

Add	Subtract	Add	Subtract	Add
4	9	7	9¢	3
2	4	6	2¢	8
—	—	—	—	—

6. Count by 5's to 100.
7. Count by 10's to 100.
8. Count by 2's from 1 to 31.

Below you see the number of pages the children had to read and the number they read in two days.

Bob had 10 pages to read. He has read 4 pages.

$$\begin{array}{r} 10 \\ 4 \\ \hline 6 \end{array}$$

To find how many pages Bob has left to read, subtract 4 pages from 10 pages.

4 from 10 = 6.

Bob has 6 pages to read.

Write the children's names on your paper. After each name give the number of pages left to read. Your first line should say: Bob, 6 pages.

	Name	Pages to Read	Pages Read	Pages Left to Read
1	Bob	10	4	6 pages left
2	John	13	4	
3	Frances	12	3	
4	Louise	11	4	
5	Mae	10	7	
6	Ralph	15	9	
7	Janet	15	7	
8	Marie	14	8	
9	Carl	10	9	
10	Fred	13	7	
11	Lois	10	6	
12	Tom	13	8	
13	Patsy	14	6	
14	Joan	17	8	
15	Jack	14	5	

Write the remainders on a folded paper. Then check the remainders.

	A	B	C	D	E	F	G
1.	18 − 9	11 − 8	13 − 4	16 − 8	10 − 4	15 − 9	11 − 4
2.	10 − 6	14 − 7	17 − 8	12 − 6	11 − 9	12 − 3	10 − 7
3.	13 − 8	16 − 7	10 − 8	15 − 6	17 − 9	15 − 8	12 − 5
4.	16 − 9	14 − 6	14 − 5	13 − 5	15 − 7	13 − 9	13 − 7
5.	11 − 3	14 − 8	13 − 6	11 − 7	14 − 9	12 − 7	11 − 5

6. Now put your paper away. Try to say the correct answers for the exercises above in 2 minutes.

7.

Add	Subtract	Subtract	Add
2	9	13	6
7	3	4	5

8. In addition the answer is called the_____.

9. In subtraction the answer is called the _____or_____.

Selling Things from the School Garden

The children raised vegetables and flowers in their school garden. The vegetables they could not sell fresh they put up in jars and sold later.

1. Helen raised and put up string beans. She spent 6¢ a jar. She sold them for 11¢ each. How much did she make on each jar of beans?

$$\begin{array}{r} 11 \\ 6 \\ \hline 5 \end{array}$$

Write the numbers in a column.
Think, 6 from 11 = 5
The difference is 5.
Helen made 5¢ on each jar of beans.

How do you find the difference between two numbers?

2. Mary raised beets and put up all the small ones. She spent 7¢ a jar and sold them for 13¢ a jar. How much did she make on each jar of beets?

3. Alice put up some tomatoes that she raised. They cost her 8¢ a jar. She sold them for 15¢ a jar. How much did she make on each jar?

4. Jim raised cucumbers. They cost him 1¢ each. He sold them for 4¢ each. How much did he make on each cucumber?

5. Jane raised radishes that cost her 3¢ a bunch. She sold them for 5¢ a bunch. How much did she make on each bunch?

6. Henry raised some small peas. They cost him 7¢ a quart. He sold them for 11¢ a quart. How much did he make on each quart?

7. Henry raised large peas, too. They cost him 4¢ a quart. He sold them for 9¢ a quart. How much did he make on each quart?

8. Edith raised sweet peas. They cost her 7¢ a bunch. She sold them for 15¢ a bunch. How much did Edith make on each bunch of sweet peas that she sold?

9. Jack raised sweet corn. It cost him 8¢ a dozen ears. He sold it for 17¢ a dozen. How much did he make on each dozen?

Look at example 1. **2 from 5 leaves 3**, and **3 from 5 leaves 2.** Take one of these numbers from 5, and you have the other number left.

Read these examples and say the remainders.

1. 2 from 5 = ____
3 from 5 = ____

2. 3 from 7 = ____
4 from 7 = ____

3. 4 from 9 = ____
5 from 9 = ____

4. 3 from 8 = ____
5 from 8 = ____

5. 3 from 9 = ____
6 from 9 = ____

6. 2 from 7 = ____
5 from 7 = ____

7. The sum of 5 and 6 is 11. If we take one of these numbers from 11, what does it leave as the remainder?

In the examples below subtract each of the two numbers from the sum. Example 8 shows how to write them.

8. 5 and 6 = 11 $\quad 11-5=6 \quad 11-6=5$

9. 4 and 3 = 7
10. 2 and 4 = 6
11. 7 and 2 = 9
12. 4 and 5 = 9
13. 5 and 2 = 7
14. 3 and 2 = 5
15. 3 and 5 = 8
16. 2 and 6 = 8
17. 5 and 8 = 13
18. 6 and 7 = 13
19. 9 and 5 = 14
20. 7 and 3 = 10

From the sum of two numbers take one of the numbers. The remainder is the other number.

Copy these exercises. Put the missing numbers in the blank spaces. Then look at this page in the book and say the missing numbers quickly.

1.	$\begin{array}{r} 10 \\ - \\ \hline 9 \end{array}$	$\begin{array}{r} 10 \\ - \\ \hline 5 \end{array}$	$\begin{array}{r} 10 \\ - \\ \hline 1 \end{array}$	$\begin{array}{r} 12 \\ - \\ \hline 8 \end{array}$	$\begin{array}{r} 11 \\ - \\ \hline 6 \end{array}$	$\begin{array}{r} 14 \\ - \\ \hline 7 \end{array}$	$\begin{array}{r} 10 \\ - \\ \hline 8 \end{array}$
2.	$\begin{array}{r} 10 \\ - \\ \hline 2 \end{array}$	$\begin{array}{r} 10 \\ - \\ \hline 7 \end{array}$	$\begin{array}{r} 10 \\ - \\ \hline 3 \end{array}$	$\begin{array}{r} 12 \\ - \\ \hline 6 \end{array}$	$\begin{array}{r} 11 \\ - \\ \hline 5 \end{array}$	$\begin{array}{r} 11 \\ - \\ \hline 2 \end{array}$	$\begin{array}{r} 10 \\ - \\ \hline 4 \end{array}$
3.	$\begin{array}{r} 11 \\ - \\ \hline 9 \end{array}$	$\begin{array}{r} 11 \\ - \\ \hline 7 \end{array}$	$\begin{array}{r} 12 \\ - \\ \hline 4 \end{array}$	$\begin{array}{r} 10 \\ - \\ \hline 6 \end{array}$	$\begin{array}{r} 12 \\ - \\ \hline 3 \end{array}$	$\begin{array}{r} 13 \\ - \\ \hline 7 \end{array}$	$\begin{array}{r} 15 \\ - \\ \hline 6 \end{array}$
4.	$\begin{array}{r} 12 \\ - \\ \hline 7 \end{array}$	$\begin{array}{r} 16 \\ - \\ \hline 8 \end{array}$	$\begin{array}{r} 12 \\ - \\ \hline 5 \end{array}$	$\begin{array}{r} 11 \\ - \\ \hline 8 \end{array}$	$\begin{array}{r} 13 \\ - \\ \hline 6 \end{array}$	$\begin{array}{r} 18 \\ - \\ \hline 9 \end{array}$	$\begin{array}{r} 12 \\ - \\ \hline 9 \end{array}$
5.	$\begin{array}{r} 11 \\ - \\ \hline 4 \end{array}$	$\begin{array}{r} 13 \\ - \\ \hline 8 \end{array}$	$\begin{array}{r} 11 \\ - \\ \hline 3 \end{array}$	$\begin{array}{r} 14 \\ - \\ \hline 5 \end{array}$	$\begin{array}{r} 17 \\ - \\ \hline 8 \end{array}$	$\begin{array}{r} 14 \\ - \\ \hline 9 \end{array}$	$\begin{array}{r} 16 \\ - \\ \hline 9 \end{array}$
6.	$\begin{array}{r} 14 \\ - \\ \hline 8 \end{array}$	$\begin{array}{r} 13 \\ - \\ \hline 4 \end{array}$	$\begin{array}{r} 15 \\ - \\ \hline 8 \end{array}$	$\begin{array}{r} 16 \\ - \\ \hline 7 \end{array}$	$\begin{array}{r} 17 \\ - \\ \hline 9 \end{array}$	$\begin{array}{r} 14 \\ - \\ \hline 6 \end{array}$	$\begin{array}{r} 13 \\ - \\ \hline 9 \end{array}$
7.	$\begin{array}{r} 13 \\ - \\ \hline 5 \end{array}$	$\begin{array}{r} 15 \\ - \\ \hline 7 \end{array}$	$\begin{array}{r} 15 \\ - \\ \hline 9 \end{array}$				

KNOWING THAT YOU KNOW

1. Read these ways of writing subtraction.

12 minus 5 = 7 12 − 5 = 7 5 from 12 = 7

2. Read these examples and give the answers.

17 − 8 =	12 minus 7 =
14 minus 9 =	13 − 4 =
11 minus 2 =	7 from 16 =
6 from 14 =	13 minus 8 =

3. Write these six subtraction examples in the three ways.

16	15	13	17	14	15
9	7	5	8	9	6

4. Subtract without using a pencil and check.

15	12	16	18	8	14	14	10	10
9	3	8	9	6	6	7	3	5
14	17	15	14	5	10	6	16	10
5	9	6	8	5	9	5	7	7

5. Subtract each of these numbers from 11.

5 7 2 6 4 9 3 8

6. Subtract each of these numbers from 13.

7 5 9 6 8 4 2 3

Were you slow in giving the answer to any examples in exercises 4, 5, and 6 above? Say those examples over with the right remainders.

We use addition when we put numbers together.
We use subtraction

(1) To find how many are left.
(2) To find the difference between two numbers.
(3) To find how many more are needed.

Tell whether you should add or subtract in these problems. Then find the answers.

1. Carl paid 2 dollars for shoes and 3 dollars for a sweater. How much did these two things cost?

2. Jack had 6 toy balloons. He let 4 of them sail away. How many were left?

3. Bob is 9 years old. His brother is 14. What is the difference between their ages?

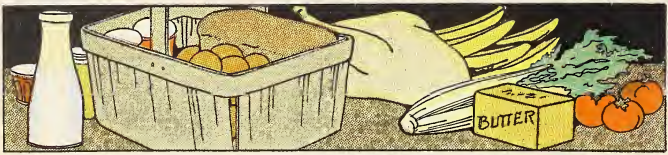
4. Dot worked 8 examples before school. There are 11 examples in the lesson. How many more does she need to work?

5. Arthur has 9 white rabbits and 8 gray rabbits. How many rabbits of both kinds has he?

6. Tom and his father started from home at 8 o'clock yesterday morning and drove 4 hours. What time was it when they stopped?

7. Jean cut out 7 doll dresses. She will need 13 dresses for the dolls at her party. How many more doll dresses should she cut out?

8. Tell the class why you add and subtract.



Filling Baskets for Thanksgiving

The children filled baskets with Thanksgiving dinner to send to families.

1. On Monday Bob's row brought food to fill 2 baskets. Tuesday they filled 1 basket. Wednesday they filled 3. How many baskets did they fill?

Baskets
2
1
3
6

To find how many baskets Bob's row filled, write the numbers in a column and add. Add down.

Say, 2 and 1 are 3 and 3 more are 6. They filled 6 baskets.

Check by adding up.

2. John's row filled these baskets, Monday 2, Tuesday 0, Wednesday 1. Write the numbers in a column and add. How many baskets did they fill?

3. The leaders and pupils in the other six rows filled these baskets. Add each column and check.

Dick	Jane	Mary	Alice	Jack	Bess	Tom
2	3	0	3	2	2	1
1	2	0	2	2	0	3
0	1	1	3	1	3	2

Write the sums on a folded paper. Can you give the correct sums in 3 minutes? Remember to add down and check by adding up.

	A	B	C	D	E	F	G	H	I
1.	2	2	3	5	4	2	4	3	4
	1	3	4	1	3	3	1	5	2
	3	1	2	3	2	4	5	1	3
2.	3	5	4	7	3	5	6	8	1
	0	3	2	0	1	4	0	1	0
	1	1	3	1	3	0	1	1	7
3.	5	3	5	3	3	8	4	1	2
	2	4	1	2	0	1	4	5	5
	2	2	1	2	4	0	2	3	2
4.	2	3	5	4	0	6	4	3	4
	1	0	0	3	4	0	0	3	5
	5	6	4	3	5	2	4	3	0
5.	9	0	1	7	5	2	6	3	0
	0	3	0	2	0	2	1	2	0
	0	6	1	1	5	2	3	5	7

Mark the answers you had wrong.

Copy those examples and practice saying them with the right sums until you know them.

The Fishing Party

1. Saturday four boys went fishing on Rock River. Bob had 3 fishhooks. John and his brother Billy had 4, and Jim had 5. How many fishhooks did the boys have?

3
4
5
12

To find how many fishhooks the boys had, write the numbers in a column and add. Begin at the top and add down.

When Bob added he said, "3 and 4 are 7, and 5 more are 12."

Jim added by saying only the sums. He looked at the numbers and said, "7, 12."

Jim could add numbers faster than Bob.

2. The boys all had good luck but Billy.

Bob caught	4 fish	Look at 4 and 2. Think 6.
John caught	2 fish	Remember 6 and add 3.
Jim caught	3 fish	Think 9.
Billy caught	0 fish	9 and 0 = ?
They caught	9 fish	The boys caught 9 fish.

Now add the numbers Jim's way and say only the sums. Say, "6, 9."

Long columns are added in the same way as shorter columns. See if you can learn to add long columns in the **quick way**. Say only the sums when you add.

3. The boys were hungry. They put their string of fish under water and sat down in the shade near the river to eat their lunches.

They had

4 ham sandwiches	To find how many sandwiches they had, add.
3 cheese sandwiches	
2 egg sandwiches	Think, (4 and 3) 7, 9, 10, 11.
1 jelly sandwich	
1 butter sandwich	They had 11 sandwiches.
11 sandwiches	See where 11 is written.

When a sum has two figures, put the right-hand figure under the ones' column and write the other figure in the place to the left of it.

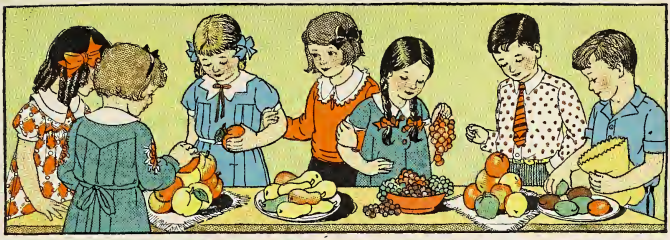
4. Copy and add the quick way. Write your sums correctly. Check the sums by adding up.

2	7	6	4	1	3	5	6	6
6	2	3	5	9	6	4	3	4
5	6	9	7	8	3	9	2	7

Write your sums on a folded paper. Add the quick way. Begin 8, 10, and write 10.

	A	B	C	D	E	F	G	H	I
1.	3	3	5	6	4	7	0	3	0
	5	0	4	0	3	1	8	4	6
	2	4	0	3	2	0	1	2	0
2.	3	0	5	4	4	3	6	4	1
	2	5	3	1	3	2	3	4	6
	8	2	8	6	0	7	9	3	4
3.	9	6	4	3	3	2	4	3	2
	0	2	2	1	4	0	5	6	5
	5	0	5	9	9	9	0	2	8
4.	1	4	2	3	0	2	1	1	6
	7	0	7	6	5	6	8	2	3
	7	4	5	8	4	4	5	9	9
5.	0	4	5	5	1	0	2	7	0
	5	4	0	2	3	0	2	1	3
	9	3	0	6	7	5	8	5	6
6.	7	5	5	5	6	3	1	3	6
	2	1	2	4	0	3	8	6	3
	7	8	7	8	6	0	8	4	6

Check your sums by adding up. Copy any examples you had wrong, and say those examples with the right sums until you know them.



The Children's Fruit Show

In each problem write the numbers in a column and find the sum. Check your answers.

1. Alice brought 4 red apples, June brought 2 red apples, and Frances brought 3 yellow apples. How many apples did the three girls bring?

2. Fred put on the table 4 red apples, 2 yellow apples, and 1 green apple. How many apples did Fred put on the table?

3. Julia had 6 yellow pears, 1 green pear, and 2 red pears. How many did she have?

4. Sue placed on the table 2 bunches of red grapes, 2 bunches of purple grapes, and 2 bunches of green grapes. How many bunches of grapes did she place on the table?

5. Out of his bag Peter took 5 purple plums, 3 green plums, and 1 red plum. How many plums did Peter take from the bag?

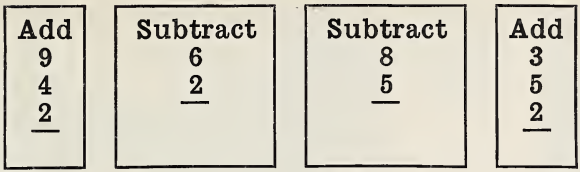
Write the sums on a folded paper. Add in the quick way.

	A	B	C	D	E	F	G	H	I
1.	1	2	4	2	3	4	3	4	1
	2	3	2	3	0	1	1	0	3
	3	1	1	1	3	4	2	1	2
	2	3	3	2	2	0	3	2	3
2.	2	2	4	5	2	3	2	3	2
	5	3	2	2	6	2	3	1	6
	1	4	3	2	1	4	4	4	1
	5	6	8	4	8	5	9	9	6
3.	4	4	2	1	2	2	0	5	4
	2	2	3	4	3	5	3	3	0
	2	2	1	2	0	0	1	0	0
	1	1	2	2	4	2	4	2	2
	5	6	3	2	9	3	5	4	8

Check your sums by adding up in the quick way. If you made any mistakes, say those examples over with the right sums until you know them.

Blackboard Practice

As your teacher reads the examples at the top of this page, each pupil may write one of them on the blackboard. Write the figures in a straight column. Find the sum. Remember how you write a sum that has two figures.

1. 

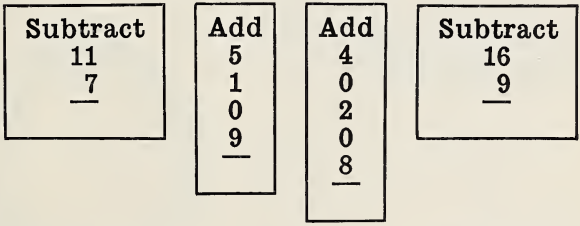
2. Add 4 to each of these numbers.

1 5 6 8 2 0 9 7 4

3. Subtract 3 from each of these numbers.

5 8 7 9 4 3 6

4. 7 from 8 = ____
2 + 0 + 6 = ____
8 from 17 = ____
7 from 11 = ____
6 plus 9 = ____
7 and 8 = ____

5. 

6. 4 plus 5 = ____
5 from 11 = ____
15 − 7 = ____
8 from 15 = ____
7 and 9 = ____
____ and 8 = 12
____ from 11 = 6
5 from 9 = ____
____ from 8 = 2
6 + 8 = ____

Reading Hours on the Clock Face

The children heard the bell ringing, and they knew it was 9 o'clock. They looked at the clock and saw that the short hand pointed to 9 and the long hand pointed to 12.

The short hand, or **hour hand**, tells the hour. The long hand, or **minute hand**, tells the minutes.

1. What time is it when the hour hand points to 9 and the minute hand to 12?

2. What time is it when both clock hands point straight up?

3. What time is it by this clock face?

Read it this way:

The hour hand points to 8 and the minute hand points to 12. It is 8 o'clock.

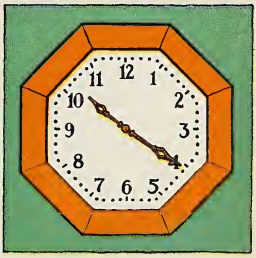
4. When the minute hand points to 12, to what number must the hour hand point to show

three o'clock?	twelve o'clock?
seven o'clock?	one o'clock?
eleven o'clock?	four o'clock?

At the end of each hour the minute hand points to 12. The hour hand points to the number that tells what hour it is.

Minutes after the Hour

5. There are 5 of the minute spaces between 1 and 2 on the clock face. There are 5 minute spaces between 2 and 3. See if you can count the minutes around the clock face by 5's. Begin 5, 10, 15. How many are there?

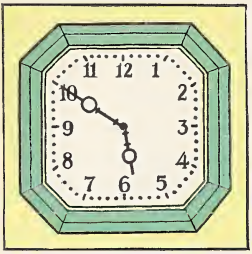


60 minutes (min.) = 1 hour (hr.)

6. Look at the picture and tell how many minutes past the hour it is. Read it two ways, "It is 20 minutes past 10," or "It is 10:20."

7. Make a picture of two clock faces and show 30 minutes past 10 o'clock on one face and 15 minutes past 10 o'clock on the other.

How People Count Time



1. Over how many minute spaces must this minute hand move before 6 o'clock? Count by 5's. The minute hand must pass over 10 more spaces before 6 o'clock. The time may be read, "10 minutes to 6."

When the number of minutes before the hour is less than 30, you may say "_____ minutes to" the hour.

Half Hour and Quarter Hour

2. Count the minute spaces on the clock face by 5's to 30. Do the same the rest of the way around. How many 30-minute periods are in one hour?

60 min. = 1 hr.

30 min. = 1 half hr.

3. In 15 minutes, or a quarter of an hour, the minute hand moves one-fourth way around the clock face. How many 15-minute periods are in one hour?

4. When the minute hand is at 6 and the hour hand half way between two numbers, we often say "half past" the hour. We say "quarter past" if the minute hand points 15 minutes after the hour.

Tell when we may say "quarter to" the hour.

You remember that when we use two figures in writing a number, we call it a **two-figure number.**

48

The 8 in this number is in ones' place where we put numbers that are less than 10. The 4 is in tens' place, the next place to the left. It shows how many 10's in 48.

Here is easy work in adding two-figure numbers.

1. In Bert's class on Monday there were 22 boys and 21 girls. How many pupils were in the class?

To find how many pupils were in the class, write the numbers and add.

22
21
43

Look at ones' column (2+1). Think 3. Write 3 in ones' place in the sum.

Look at tens' column (2+2). Think 4. Write 4 in tens' place in the sum.

There were 43 pupils in the class.

2. On Tuesday there were 23 boys and 22 girls. How many pupils were in the class that day?

3. On Wednesday 24 boys and 23 girls came. How many pupils came Wednesday?

4. Thursday 23 boys and 23 girls came to the class. How many are 23 pupils and 23 pupils?

To add two-figure numbers, begin at the right and add each column. Be careful to place the ones of the sum under ones' column and the tens of the sum under tens' column.

To add a one-figure number and a two-figure number, write the one-figure number in ones' column. Look at the first example. In this example you may think nothing or 0 under the 1 in tens' column.

Write your sums on a folded paper.

	A	B	C	D	E	F	G
1.	12	51	43	14	45	71	67
	6	41	23	75	11	18	30
2.	63	43	63	26	73	47	57
	2	36	25	42	23	32	22
3.	71	54	52	56	51	60	13
	4	34	35	43	26	10	56
4.	34	81	45	45	30	54	46
	3	18	34	53	67	35	52
5.	46	37	26	44	25	36	12
	2	61	71	45	74	63	75

Check the sums. If you had any wrong, say the numbers in those examples until you can add them correctly.

In each example write the numbers in a column and add. Then check your work by adding up.

6. 44 and 42
7. 22 and 7
8. 28 and 30
9. 18 and 71
10. 58 and 21
11. 40 and 37
12. 23 and 6
13. 30 and 59
14. 34 and 60

Talking Over Our Test in Arithmetic

The teacher gave a test in arithmetic. The test had two parts, with 25 examples in the first part and 30 examples in the second part.

In these sentences find how many examples each pupil had right.

1. John had 24 examples right in the first part of the test and 25 right in the second part.

2. Mary had 23 examples right in the first part and 24 in the second part.

3. Ted had 15 examples in the first part and 21 in the second part.

4. Shirley had 17 examples in the first part and 22 in the second part.

5. Sam had 15 examples in the first part and 23 in the second part.

6. Jerry had 23 examples in the first part and 16 in the second part.

7. Norma had 22 examples in the first part and 27 in the second part.

8. Add to see if you can tell how many examples the other children worked correctly. Check.

Doris	Clara	Willie	Jimmy	Henry	Ann
13	16	21	21	25	20
23	22	28	25	24	23

The Boys and Their Rabbits

1. Albert had 23 rabbits and sold 11 of them. How many rabbits did he have left?

To find how many were left, subtract 11 from 23.

23
11
12

Write the numbers in a column.
Think, 1 from 3 = 2
Think, 1 from 2 = 1
The remainder is 12.
Albert had 12 rabbits left.

2. John had 27 rabbits and sold 16 of them. How many rabbits did he have left?

27
16
11

Write the numbers in a column and subtract.
Think, 6 from 7 = ____
Think, 1 from 2 = ____
The remainder is 11.
John had 11 rabbits left.

Begin at the right and subtract. Place the ones of the answer under ones' column and the tens under tens' column.

Check your answers in these problems.

1. Sue had 22 apples in a basket. Her playmates ate 10. How many apples did she have left?

2. Jane weighed 53 pounds and her little sister weighed 41 pounds. How much more did Jane weigh than her sister?

3. There were 65 children at the school picnic. After it rained, only 44 were at the picnic. How many had gone?

4. Fred took 43 bunches of green onions to the market. After selling all he could, he had 12 bunches left. How many bunches did he sell?

5. Bob took 56 bunches of radishes to the market and sold all but 14 bunches. How many bunches did he sell?

6. Twenty-seven boys ran in the race. All but 14 finished in less than 1 minute. How many of the boys finished in less than 1 minute?

7. In the morning there were 76 fish in the market window. By three o'clock in the afternoon all but 21 fish had been sold. How many had been sold?

8. There were 48 flags for our class in the school. After passing out flags for the parade, there were 12 flags left. How many flags were used in the parade?

Boys and Girls Using Money

1. John had 16¢ and bought a 5¢ pencil. How much did he have left?

2. Marie had a dime and a nickel and 2 pennies. How much money did she have?

3. Janet started to the store with 10¢ and found 3¢. How much did she have then?

4.

Add	Subtract	Add	Subtract	Add
10	17	15	16	51
22	9	42	7	36
35		31		12

5. Read, and give the answers.

13+6=____ 6+12=____

4+3+0+5=____ 7+2+1+6=____

18 minus 5=____ 13 minus 4=____

13−9=____ 11−8=____

6. Subtract 2 from each number.

9 4 7 3 8 2 11 5 10 6

7.

Add	Subtract	Add	Subtract	Add
16¢	11¢	22¢	14¢	8¢
13¢	2¢	5¢	6¢	11¢

8. Ted has 9¢ and wants a notebook that costs 16¢. How much more money must he have?

Subtract 4 from each of these numbers.

1. 8 11 9 12 7 15 18 10

Subtract, and check your remainders.

2.

8	9	12	7	16	6	11	13
5	4	7	5	9	4	6	6

Write the remainders on paper. Hold the answers under the examples, and check.

	A	B	C	D	E	F	G	H
3.	75	34	78	97	59	96	36	50
	65	13	56	22	27	80	12	30
4.	77	67	82	60	90	97	64	38
	55	54	72	50	50	67	24	36

In each example below tell what number must be subtracted to leave the remainder that is given.

	A	B	C	D	E	F	G	H
5.	18	17	16	15	16	15	13	14
	–	–	–	–	–	–	–	–
	9	9	7	8	8	7	5	5

In each example below how much larger or smaller is the first number than the other?

6. 5 8 15 7 6 13 9 2
7. 8 13 3 9 17 9 5 11
8. 6 17 12 3 8 17 4 9

The School Cafeteria

Meat 12¢	Cream of Tomato Soup 6¢	Milk 5¢
Salad 10¢	Baked Beans 6¢	Ice Cream 5¢
Potatoes 4¢	Graham Crackers 3¢	Chicken Pie 15¢
Rolls 5¢	Strawberries and Cream 10¢	Cake 5¢

1. How much must you pay for these?

(a) Meat and Potatoes; (b) Chicken Pie and Milk; (c) Salad and Graham Crackers; (d) Ice Cream and Cake; (e) Chicken Pie and Potatoes; (f) Baked Beans and Salad; (g) Strawberries and Cream and Cake.

2. What 2 things can you buy for 11 cents?

3. What 2 things can you buy for 13 cents?

4. What 3 things can you buy for 15 cents?

5. What 2 things can you buy for 16 cents?

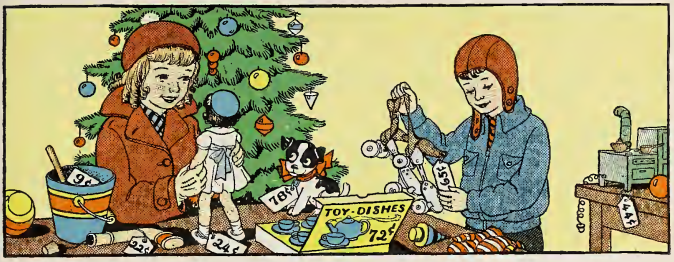
6. What 2 things can you buy for 12 cents?

7. Add, and check sums. In the first example say, $10¢+5¢=15¢$. In the second example add each column. How will you say the third example?

10¢	21¢	63¢	10¢	31¢	26¢	43¢	44¢
5¢	42¢	6¢	51¢	45¢	30¢	25¢	3¢

8. Subtract, and check remainders.

24¢	16¢	99¢	15¢	37¢	55¢	69¢	72¢
12¢	5¢	38¢	13¢	24¢	20¢	46¢	50¢



In the Toy Store

Should you add or subtract? Find the answers.

1. Lucy and Roger were in a toy store. Lucy paid 24 cents for a doll. Roger paid 65 cents for roller skates. What did the doll and skates cost?

2. Roger had 35 cents left. He bought a popgun for 22 cents. How much money did he have then?

3. Lucy bought a little stove for 44 cents and saucepans for 25 cents. How much did they cost?

4. Carolyn and her mother were in the store, too. Carolyn's mother bought a set of toy dishes for 72 cents and a little pail for 9 cents. The pail was for the baby's sand box. How much did the dishes and pail cost Carolyn's mother?

5. Lucy and Roger wanted a china dog to put in front of their playhouse. The china dog cost 78 cents. They had only 20 cents left. How much more money did they need to buy the dog?

1. A **three-figure number** has 3 figures in it. The third place from the right is **hundreds' place.** Read 241 "two hundred forty-one." Read it without saying "and."

2. Read: 125 452 81 648 373 295 999

3. We use 0 in writing a three-figure number that has no tens or no ones. Four hundred six is written 406. One hundred twenty is 120. Two hundred is 200. Read these numbers: 300, 480, 204. Tell why each zero is used in the numbers.

4. What number comes just after each of these?

210 219 231 279 298 299 344

5. Count by 100's to 900. Begin 100, 200, 300.

6. Write these numbers in figures in a column.

six hundred	seven hundred	five hundred
one hundred	nine hundred	four hundred
two hundred	eight hundred	three hundred

7. Write these numbers in words: 500, 700, 300.

8. Copy these rows and fill the blanks.

191	192	—	—	—	196	—	—	199	—	201
295	—	—	298	—	—	301	—	—	304	—
890	—	—	893	894	—	896	—	—	899	—

9. Read and say the number for each blank.

100	101	—	103	104	—	106	—	108	—	110
115	116	—	118	119	120	—	122	—	—	125
189	—	—	—	193	—	—	—	197	—	199

1. See how long it takes you to find these pages in your arithmetic book.

89 100 125 13 175 105

2. Find page 137. Must you then turn toward the front or the back of the book to find these pages?

175 127 157 123 79 47

3. Finish these rows of numbers.

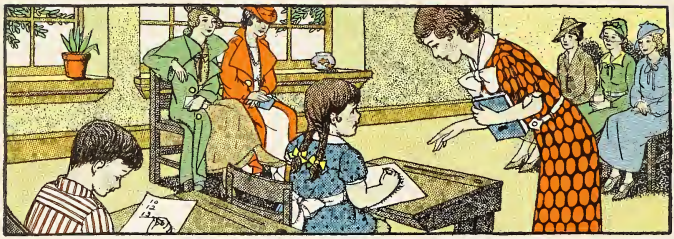
(a) Add by 10's to 100, beginning 10, 20, 30.
(b) Add by 10's to 200, beginning 80, 90, 100, 110.
(c) Add by 10's to 300, beginning 250, 260.
(d) Add by 10's to 520, beginning 450, 460.
(e) Add by 10's to 915, beginning 855, 865.
(f) Add by 5's to 135, beginning 95, 100, 105.
(g) Add by 5's to 225, beginning 185, 190, 195.
(h) Add by 5's to 530, beginning 480, 485.
(i) Add by 100's from 150 to 850. Begin 150, 250.

4. Write these numbers as your teacher reads them.

322	217	245	617	308	287	119	410
139	333	213	405	520	647	715	571

5. Write these numbers in words.

79	99	101	120	200	350	240	500
750	820	468	170	730	107	802	310



Visitors' Day

1. Last week the school had visitors' day four days. On Monday 25 visitors came to the first grade, 10 to the second grade, and 12 to the third. How many visitors came to these grades on Monday?

25
10
12
47

Begin at the right, and add.
Think 5, 7. Write 7 under ones' column.
Add the next column on the left.
Think 3, 4. Write 4 under tens' column.
On Monday 47 visitors came to these grades.

2. Tuesday the first grade had 14 visitors; second grade, 10; third, 20; and fourth, 5. How many visitors did these grades have on Tuesday?

14
10
20
5
49

Begin at the right, and add.
Think 9. Write 9 under ones' column.
Add the next column on the left.
Think 2, 4. Write 4 in the sum below tens' column.
These grades had 49 visitors on Tuesday.

3. The third day for visitors was Wednesday. There were 11 visitors in the first grade, 12 in the second, 20 in the third, 5 in the fourth, and 21 in the fifth. How many visitors came that day?

11
12
20
5
21
69

Add the numbers of visitors.
Begin at the right.
Think 3, 8, 9. Write 9 under ones' column.
Add the next column on the left.
Think 2, 4, 6. Write 6 under tens' column.
On Wednesday 69 visitors came to these grades.

To add two-figure numbers, begin at the right. Add the numbers in the first column. Then add the numbers in the next column.

Remember, a one-figure number is added only in ones' column.

4. On the last day for visitors, Thursday, the first grade had 15, the second grade 20, the third grade 12, the fourth grade 10, and the fifth grade only 2. How many visitors came on Thursday?

5. On what day did the most visitors come to the first grade?

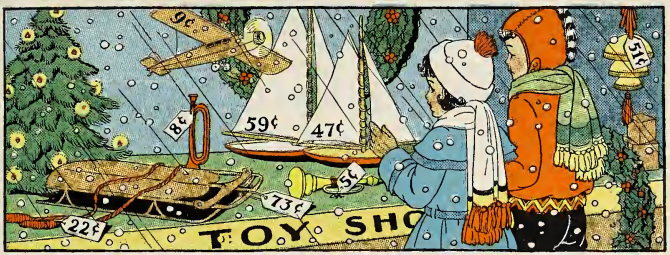
6. On what day did the most visitors come to the third grade?

Write the answers on a folded paper. Add down.

	A	B	C	D	E	F	G	H	I
1.	36	20	27	21	26	25	23	25	74
	30	46	32	34	42	41	34	30	10
	12	21	30	40	30	33	40	34	13
2.	73	23	71	85	5	5	44	3	27
	5	14	4	10	40	3	22	22	40
	11	2	14	2	34	30	13	72	30
3.	11	25	16	20	22	15	41	25	20
	50	20	33	13	23	50	17	40	12
	12	13	10	12	10	2	20	21	12
	20	41	30	21	13	31	11	13	25
4.	10	8	4	24	30	55	64	47	42
	7	10	11	50	13	10	3	20	23
	60	51	2	12	34	21	10	30	4
	21	30	42	3	21	13	22	2	30
5.	10	21	31	41	22	33	42	20	40
	4	3	14	3	5	6	10	4	4
	51	20	20	30	31	10	30	22	13
	13	20	4	5	20	30	6	10	21
	21	15	30	20	21	20	10	23	10

Check. If you had any sums wrong, add the numbers again until you can add them correctly.

Now try to find all the sums in 6 minutes.



Just before Christmas

Tell how to find the answer to each problem. Then answer the question the problem asks.

1. Joe and Carol are looking at the Christmas toys in the show window. Joe wants to buy an airplane for Billie. He has 5 cents. How much more money does he need to buy the airplane?

2. How much must Carol pay for a large horn for Billie and a small horn for the baby?

3. How much will Joe have to pay for the sled and airplane?

4. Which of the two boats costs less than the other one? How much less does it cost?

5. How much will the children's father have to pay for an airplane, a rope, and a gong?

6. If you have 65 cents and you must pay 33 cents for something you want, how can you find how much money you will have left? How much?

KNOWING THAT YOU KNOW

Add down. Write the sums on a folded paper.

Test 1. Adding Two Numbers

4	5	7	5	0	2	3	4	0	8
3	0	2	4	6	5	6	5	8	9
9	7	3	5	7	8	4	5	7	9
5	6	7	8	9	6	9	6	8	7

Test 2. Adding Longer Columns

4	5	3	3	2	3	4	8	9	2
3	0	5	2	6	5	2	1	0	6
5	6	4	7	6	9	8	7	3	5
2	4	8	2	7	9	5	3	6	2
4	5	0	4	0	0	2	4	3	4
3	0	1	3	2	0	2	9	0	3
6	8	7	5	9	8	7	0	9	8

Test 3. Adding Two-Figure Numbers

25	38	62	54	76	34	15	20
64	51	37	23	22	63	81	65
42	23	15	10	34	21	51	37
35	32	23	43	53	35	24	20
11	43	50	24	12	30	23	42

Check. If you made mistakes on any test, work the exercise of the same number on page 91.

HELPING YOU TO KNOW

Write the sums on a folded paper.

Exercise 1. Adding Two Numbers

5	3	9	4	5	7	8	2	8	0
4	7	7	3	6	2	9	5	6	6
3	0	7	9	4	5	5	4	7	7
6	8	8	5	9	8	0	5	9	6

Exercise 2. Adding Longer Columns

5	2	4	8	2	3	3	9	3	4
0	6	3	1	6	2	5	0	5	2
6	6	5	7	5	7	9	3	4	8
7	3	2	9	6	2	8	2	4	5
0	4	4	0	3	4	0	4	5	2
2	9	3	0	0	3	1	3	0	2
9	0	5	8	9	6	7	8	8	7

Exercise 3. Adding Two-Figure Numbers

20	54	25	15	62	34	76	38
65	23	64	81	37	63	22	51
15	37	21	23	34	42	10	51
23	20	35	32	53	35	43	24
50	42	30	43	12	11	24	23

KNOWING THAT YOU KNOW

Write the remainders on a folded paper.

Test 1. Subtracting One-Figure Numbers

9	6	5	8	7	9	7	8	7	1
7	5	4	3	0	6	3	0	6	0
4	7	9	6	5	8	9	6	8	9
3	5	4	0	3	6	3	6	7	5

Test 2. Subtracting from Two-Figure Numbers

10	12	16	14	17	13	11	15
3	7	9	8	9	6	7	6
14	18	15	16	13	10	17	16
5	9	7	8	5	4	8	7

Test 3. Subtracting Two-Figure Numbers

26	47	65	34	78	59	92	87
14	32	21	22	45	36	71	23
35	79	83	98	46	94	82	99
15	54	30	26	13	54	40	23

Test 4. Using Signs in Subtraction

$9-8=$	6 less 4 =	$13-4=$	5 from 12 =
$8-5=$	10 less 7 =	$16-6=$	9 from 14 =
$10-4=$	9 less 1 =	$18-9=$	6 from 13 =

Check. If you made mistakes on any test, work the exercise of the same number on page 93.

HELPING YOU TO KNOW

Subtract. Write remainders on a folded paper.

Exercise 1. Subtracting One-Figure Numbers

5	9	8	9	8	9	9	6	4	6
3	6	0	5	3	4	7	6	3	5
7	7	7	8	1	9	7	6	5	8
6	5	3	6	0	3	0	0	4	7

Exercise 2. Subtracting from Two-Figure Numbers

18	13	16	10	11	16	14	12
9	6	7	3	7	8	5	7
10	16	15	14	17	15	17	13
4	9	6	8	9	7	8	5

Exercise 3. Subtracting Two-Figure Numbers

34	92	65	59	46	26	99	79
22	71	21	36	13	14	23	54
87	47	94	35	78	98	82	83
23	32	54	15	45	26	40	30

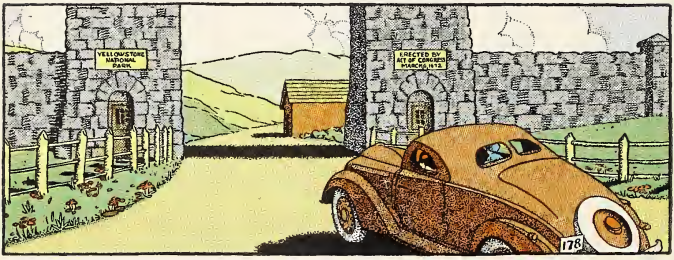
Exercise 4. Using Signs in Subtraction

$9-1=$	18 less $9=$	$12-5=$	13 less $4=$
$13-6=$	10 less $4=$	$6-4=$	8 less $5=$
$14-9=$	9 less $8=$	$10-7=$	16 less $6=$

CHAPTER 3

MORE ADDITION AND SUBTRACTION

Adding Easy Three-Figure Numbers



1. Bill and his dad drove to Yellowstone Park. The first day they drove 321 miles; the second day, 230 miles; the third day, 325 miles; and the last day, 102 miles. How many miles did they drive?

321
230
325
102
978

Add the right-hand column. Think 6, 8. Write 8 in ones' place in the sum.
Think 5, 7. Write 7 in tens' place.
Think 5, 8, 9. Write 9 in hundreds' place.
The sum is 978.
They drove 978 miles on the trip.

Always begin with the right-hand column when you add numbers. Then add the next column, and so on. Place the sum under the column added.

Write the sums on a folded paper. Add down.

	A	B	C	D	E	F
1.	123	437	526	261	324	782
	465	542	363	718	655	104
2.	450	602	572	311	370	363
	332	360	407	280	521	513
3.	223	532	434	354	530	212
	134	143	152	302	145	344
	312	324	310	131	220	431
4.	221	538	432	335	406	123
	545	101	453	200	301	432
	233	240	103	364	252	341
5.	425	334	341	142	455	210
	232	201	103	421	300	132
	110	230	212	203	102	304
	231	124	323	230	130	242

Check your sums by adding up, and see if they are right.

If you made any mistakes, copy the examples that are wrong, and add the numbers in those examples again carefully.

Vacation at Indian River Camp

1. Last summer 215 Boy Scouts went to Indian River Camp and this summer 368 are going. How many more Boy Scouts are going this summer than went last summer?

To find how many more are going this summer, subtract 215 from 368.

$$\begin{array}{r} 368 \\ 215 \\ \hline 153 \end{array}$$

Think, 5 from 8 = 3. Write 3 in the remainder under ones' column.
Think, 1 from 6 = 5. Write 5.
Think, 2 from 3 = 1. Write 1.
The remainder is 153.

153 more Boy Scouts are going to Indian River Camp this summer.

Always begin to subtract at the right with the ones' column. Then subtract in the next column to the left, and so on.

2. A year ago 252 Boy Scouts stayed an extra week at camp. This year 286 are going to stay an extra week. How many more are going to stay an extra week this year than stayed last year?

To find how many more will stay an extra week this year, subtract 252 from 286.

286
252
34

Think, 2 from 6 = ____ Write 4 in the remainder.
Think, 5 from 8 = ____ Write 3.
Think, 2 from 2 = ____ Do not write 0.
The remainder is 34.

34 more Boy Scouts will stay an extra week this year than stayed last year.

If the left-hand figure in a remainder is 0, do not write it.

Subtract, and check.

3.	307	560	247	954	699	596
	204	540	125	331	646	330
4.	152	890	794	897	614	526
	102	270	744	150	410	514
5.	598	594	486	682	938	654
	442	563	366	670	233	633
6.	496	399	478	897	799	867
	234	385	444	827	471	124

1. Ernest paid 20¢ for a ball and sold it for 25¢. How much did he make?

2. Fred's glove cost 98¢ and his bat cost 78¢. How much more did the glove cost than the bat?

3. Ben had 14¢. His aunt gave him 20¢ and his mother gave him 23¢. How much did he have then?

4. Some 48¢ dolls were marked 35¢ for a sale day. What was the difference in price?

Add, and check the sums.

5.	152	231	612	624	852	241
	826	747	303	273	122	526
6.	641	453	674	251	250	107
	205	112	213	316	324	702
	151	432	102	221	415	50

7. When you put numbers together, you _____.

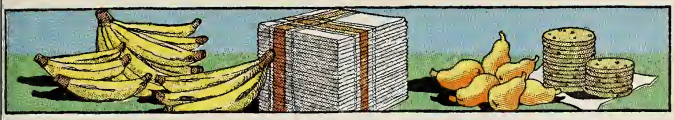
Subtract, and check the remainders.

8.	854	698	845	969	787	746
	332	371	502	465	331	514
9.	845	747	779	824	445	948
	525	332	711	700	222	945

10. To find the difference between two numbers, you _____.

11. To find how many are left, you _____.

12. To find how many more are needed, you _____.



1. Write the names of things you can get by the dozen or half dozen (a) at the market, (b) at the bakery, (c) at other kinds of stores.

Write one-half dozen in this way, $\frac{1}{2}$ **doz.**

2. Frank's mother bought a dozen oranges at the store. She had 4 oranges in the ice box at home. How many oranges did she have then?

3. Tell how many things of each kind Frank's mother would get if she bought

(a) $\frac{1}{2}$ doz. cookies
(b) 1 doz. bananas
(c) 2 doz. oranges
(d) $\frac{1}{2}$ doz. pears
(e) 2 doz. jar rubbers
(f) $\frac{1}{2}$ doz. buttons
(g) 2 doz. paper napkins
(h) 1 doz. roses

Copy on your paper the problems below and fill the blanks.

4. 6 eggs and 6 eggs = ____ doz. eggs.

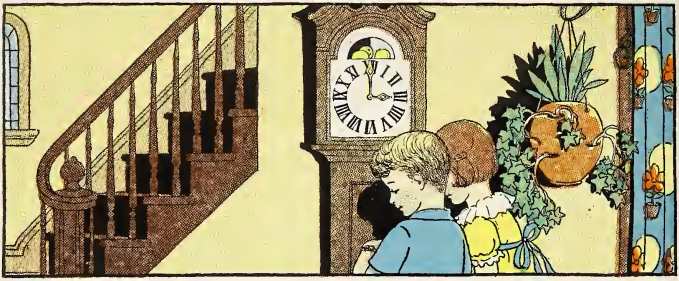
5. 1 doz. means ____.

6. 11 oranges and 1 orange = ____ doz. oranges.

7. 13 eggs are 1 doz. eggs and ____ egg.

8. 9 eggs and 3 eggs = ____ doz. eggs.

9. 12 eggs and 12 eggs = ____ doz. eggs.



The hours on Albert's new watch are shown this way: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12. On the old clock the hours are marked in Roman numerals. The Romans used letters where we use figures.

1. On Albert's watch three is written 3. On the old clock three is III. On Albert's watch twelve is 12. How is twelve written on the old clock?

2. Make a table like this, and fill the blanks.

	Our Way	Roman Way
one	1	I
two		II
three		III
four		IV or IIII
five		V
six		VI

	Our Way	Roman Way
seven	7	VII
eight		VIII
nine		IX
ten		X
eleven		XI
twelve		XII

3. Without looking at your paper or book, write the Roman numerals from 1 to 12.

Some Ways of Using Roman Numerals

1. Tell what numbers you can write in Roman numerals by using only the letter I.

2. What two numbers can you write in Roman numerals by using the letters I and V together? What is the difference in the way these two numbers are written?

3. Tell what numbers you can write in Roman numerals by using the letters I and X together. What is the difference in the way these two numbers are written?

> In writing Roman numerals, I placed before V or X means 1 less than V or X. One, two, or three I's placed after V or X mean 1, 2, or 3 more than V or X.

4. Mary and John are reading the same book. Mary has read to the end of Chapter IV. John has read to the end of Chapter VI. Which has read more? How much more?

5. In a book which Elsie and Tom are reading, Elsie has finished Chapter IX and Tom has finished Chapter XII. How many more chapters has Tom read than Elsie?

6. There are 9 chapters in Frank's book. He has finished Chapter VIII. How many more chapters are left for him to read?

Half-Dollar $.50
50 cents 50¢

One Dollar $1.00
100 cents 100¢

1. What is the name of the smaller coin?

2. How many pennies is it worth? How many dimes?

3. At the top of the page are ways to write 1 half-dollar. Write it these ways. Notice the sign ($) and the dot (.) before 50 in one way.

4. What is the name of the larger coin at the right of the page?

5. How many pennies is this coin worth? How many dimes?

6. Joe has a half-dollar and Tom has 6 dimes. Which boy has more money than the other?

7. Ruth had 100 cents. Did she have enough money to buy a doll carriage at $1.00?

8. Bob had 50¢. He wanted to buy a baseball bat for $1.00. How many more cents did he need?

10 cents	=	1 dime
5 dimes	=	1 half dollar
10 dimes	=	1 dollar

1. One half-dollar is the same as how many dimes?

2. One dollar is the same as how many dimes?

3. You have learned the four ways in which you may write one dollar. Write it in all those ways.

4. **$1.00** is read one dollar. **$2.00** is read two dollars. The sign $ is read **dollar** or **dollars.** Read these money numbers: $4.00, $8.00, $10.00.

5. **$2.25** is read two dollars **and** twenty-five cents.

The **decimal point** is the dot before the number of cents. It is read **and.** It must be used when you write dollars and cents with the dollar sign.

Read these money numbers: $4.00, $7.75, $19.37.

6. **$2.05** is read two dollars and five cents.

You must have two places for cents. When the number of cents is less than 10, use 0 next to the decimal point.

Read these numbers: $3.07, $5.01, $8.03.

7. Read these numbers:

(a) $1.10	(d) $ 3.50	(g) $11.00
(b) $1.05	(e) $ 9.47	(h) $11.15
(c) $1.75	(f) $10.25	(i) $21.45

1. Number the lines on your paper from 1 to 10. Copy these money numbers in words. After each one, write the figures for the words, as you see in the first line.

Twenty cents	20¢ or $.20
Thirty-five cents	
Seventy-five cents	
Fifty-four cents	
Eighty-one cents	
Ninety-five cents	
Seventeen cents	
Sixty-nine cents	
Forty-seven cents	
Twenty-three cents	

2. Number your paper from 11 to 20. Now finish this exercise as you see in the first line.

One dollar	100 cents	$1.00
One dollar and ten cents		
One dollar and fifty cents		
One dollar and sixty-one cents		
One dollar and thirty-six cents		
One dollar and eighty-nine cents		
One dollar and ninety-five cents		
One dollar and ninety-nine cents		
Two dollars		
Two dollars and one cent		

Fred knows how the clerk at the store makes change. He counts in money from the cost of the things to the amount of money he receives.

1. Fred bought a kite for 11 cents and handed the clerk a dime and a nickel.

The clerk laid down the kite and said, 11 cents. He laid down pennies, one by one, and counted

12,

13,

14,

15.

Was that the right change?

2. Arthur came with Fred. He bought a tablet for 12 cents. He gave the clerk a quarter.

(a) The clerk laid down the tablet and said, 12 cents.

(b) He laid down 3 pennies and a dime, counting

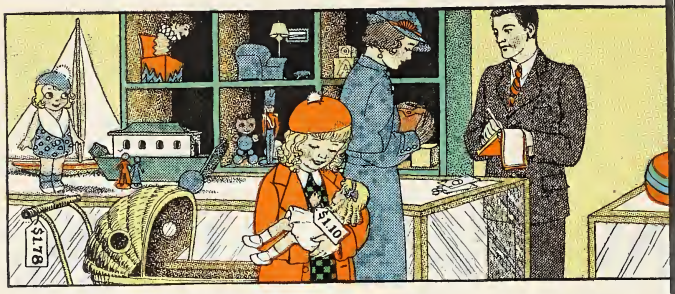
13,

14,

15,

25 cents.

Play store. Make change the way the clerk does.



Buying Things

1. Mrs. Williams paid $1.10 for a doll and $1.78 for a doll carriage. How much did she pay for both?

To find the cost of both, add $1.10 and $1.78.

Write the numbers in a column. The decimal points must be in a column.

$1.10
1.78
$2.88

Think, 0 and 8 are 8. Write 8 under 8.
Think, 1 and 7 are 8. Write 8 under 7.
Write the decimal point under the other decimal points.
Think, 1 and 1 are 2. Write 2 under 1.
The doll and carriage cost $2.88.

2. Jack paid $7.50 for an automobile and $1.08 for a horn and bumpers. How much did all these cost? $7.50 + $1.08 = ?

3. Roy paid $1.65 for a truck and $1.30 for a toy gas station. How much did he pay for both?

1. Find the cost of these things. Place a dollar sign before the first number to be added and before the sum.

Kite	$1.10	Sled	$2.15
Games	2.15	Skates	1.70
Train	$8.06	Tricycle	$8.00
Track	2.52	Doll	1.50

2. Play you are a clerk in a store. Tell how you would count the change in these examples:

Cost of Things	Money Used	Change
Top..... 7¢	1 dime.....	_____
Toy clock .....16¢	1 quarter	_____
Marbles.....22¢	1 quarter	_____
Toy telephone...27¢	1 half dollar.....	_____
Doll's cradle....33¢	1 half dollar.....	_____

3. Copy and add. Check sums.

A	B	C	D	E	F
$4.64	$2.97	$3.57	$8.95	$3.60	$3.00
7.02	3.00	2.22	4.02	2.29	3.51
$1.25	$3.45	$1.67	$1.14	$6.08	$3.54
2.50	5.40	3.32	5.33	.90	.22

In adding dollars and cents keep the decimal points in a column. When there are no dollars in one of the numbers, think 0 in that place. Look at the last two examples.

Read, and give the sums without using a pencil.

1. Beginning 2, 4, 6, add by 2's to 40.

2. Beginning 1, 3, 5, add by 2's to 41.

3. Beginning 3, 6, 9, add by 3's to 48.

4. Beginning 1, 4, 7, add by 3's to 40.

5. Beginning 4, 8, 12, add by 4's to 44.

6. Beginning 1, 5, 9, add by 4's to 45.

7. Beginning 5, 10, add by 5's to 100.

8. Beginning 1, 6, 11, add by 5's to 101.

9. Add 2 to each of these numbers: 8, 9, 11, 12, 15, 16, 20.

10. Add 3 to each: 7, 8, 10, 13, 14, 16, 19, 20.

11. Add 2 to each: 14, 16, 17, 20, 21, 24, 30.

12. Add 3 to each: 18, 15, 22, 25, 17, 33, 31.

13. Add 4 to each: 10, 12, 15, 13, 17, 21, 23.

14. Add 5 to each: 10, 11, 13, 12, 16, 21, 22.

15. Write the sums on a folded paper.

(1)	11+2=	17+3=	11+5=	10+7=
(2)	11+4=	11+8=	12+8=	13+8=
(3)	12+3=	10+9=	13+6=	14+5=
(4)	13+2=	13+3=	14+4=	14+7=
(5)	14+6=	18+3=	13+7=	15+7=
(6)	13+4=	19+5=	19+6=	16+6=
(7)	15+6=	10+6=	18+7=	18+8=

In all the exercises on this page read the examples and say the sums.

1. (a) $15+2=$ $25+2=$ $35+2=$ $45+2=$

Do you see that when you add 2 to a number that ends in 5, the sum ends in 7?

(b) $15+3=$ $25+3=$ $35+3=$ $45+3=$

If you add 3 to a number that ends in 5, how does the sum end?

(c) $15+4=$ $25+4=$ $35+4=$ $45+4=$

If you add 4 to a number that ends in 5, how does the sum end?

2. (a) $12+5=$ $22+5=$ $42+5=$ $92+5=$
(b) $12+6=$ $22+6=$ $42+6=$ $92+6=$
(c) $12+7=$ $22+7=$ $42+7=$ $92+7=$

Think of a number that ends in 2. Add 5, and tell how the sum ends. Add 6 and tell. Add 7.

3. (a) $14+7=21$ $24+7=31$ $54+7=61$
(b) $14+8=22$ $24+8=32$ $54+8=62$
(c) $14+9=23$ $24+9=33$ $54+9=63$

Think of a number that ends in 4. Add 6, and tell how the sum ends. Add 7 and tell. Add 8.

4. (a) $17+4=$ $27+5=$ $18+3=$ $28+4=$
(b) $19+7=$ $39+7=$ $69+8=$ $89+9=$

1. Roy counts by 10's and adds 5 to each number as he counts. He says, "10 and 5 are 15, 20 and 5 are 25, 30 and 5 are 35, 40 and 5 are 45."

See if you can count by 10's as Roy does, and add 3 to each number. Begin, 10 and 3 are 13, 20 and 3 are 23, 30 and 3 are 33. Stop at 73.

2. Mary begins with 2 and adds 4 to each number as she counts by 10's. She says, "2 and 4 are 6, 12 and 4 are 16, 22 and 4 are 26."

Begin with 2 and add 6 to each number as you count by 10's. Stop at 62. Begin, 2 and 6 are 8, 12 and 6 are 18, 22 and 6 are 28.

3. Read the numbers below, and add 6 to each number as you read. Begin, 8 and 6 are 14.

8 18 28 38 48 58 68 78 88 98

4. With what figure does each number in exercise 3 end? When you add 4, how do all the sums end? What happens to the tens in each example?

5. Read these examples and give the sums:

$6+7=$ $16+7=$ $26+7=$ $36+7=$ $76+7=$

6. Look again at exercise 5. Now count by 10's from 6 to 76, and add 7 each time as you count.

If you add 7 to a number that ends in 6, how does the sum end? What happens to the tens' figure? Why?

Copy these examples and write the tens' figures in each sum. Do you see that each tens' figure is 1 more than the tens' figure above it?

	A	B	C	D	E	F	G	H	I
1.	29	18	25	36	97	44	78	55	36
	3	8	8	4	6	7	9	9	6
	2	6	3	0	3	1	7	4	2
2.	46	99	86	57	78	65	34	77	59
	7	5	8	9	2	5	9	8	4
	3	4	4	6	0	0	3	5	3
3.	68	43	68	47	32	54	35	89	64
	7	8	5	4	9	8	6	2	6
	5	1	3	1	1	2	1	1	0
4.	59	89	37	63	19	23	17	11	15
	7	8	3	9	9	8	7	9	8
	6	7	0	2	8	1	4	0	3
5.	49	36	64	48	36	45	72	49	37
	3	5	6	7	8	6	8	6	7
	2	1	0	5	4	1	0	5	4
6.	35	54	56	36	48	49	45	69	56
	6	8	5	7	4	5	7	1	7
	1	2	1	3	2	4	2	0	3

Your teacher will read the sums. If you had any mistakes, copy those examples with the right sums.

Adding One-Figure and Two-Figure Numbers

Write the sums quickly on a folded paper. See if the tens' figure in the sum is more than the tens' figure above it. Take only one step for each example. In the first example, think, $40+2=42$.

	A	B	C	D	E	F	G	H	I
1.	40	81	63	78	40	42	87	54	63
	2	3	4	2	3	5	4	3	3
2.	54	79	40	86	63	42	63	40	64
	4	3	4	5	5	6	6	5	5
3.	84	54	72	82	45	72	56	64	58
	6	5	5	7	2	4	5	7	4

Adding by endings helps you in adding longer columns. In adding these numbers, say only the sums. Add each new number in one step, as you did above. In example (A) **think** 15 and 8, and **say** 23.

	A	B	C	D	E	F	G	H	I
4.	15	9	28	6	17	8	14	19	8
	8	7	4	9	8	5	7	5	9
	2	3	6	7	8	9	6	8	6
	8	7	4	8	8	6	9	6	9
	2	3	6	4	6	5	7	9	5
	8	7	4	7	8	9	8	6	9

In example (A) show in three places that the sum ends in 3 if you add 8 to a number ending in 5. What can you find about endings in (B)?

1 dime 2 cents

1. Twelve cents is the same as 1 dime and ____ cents. $12¢ = 1$ dime and $2¢$.

Copy and fill the blanks in the exercise below.

2. (a) 15 cents = ____ dimes and ____ cents
(b) 18 cents = ____ dimes and ____ cents
(c) 20 cents = ____ dimes
(d) 25 cents = ____ dimes and ____ cents

Write these amounts of money in cents.

3. (a) 2 dimes and 1 cent = 21 cents
(b) 7 dimes and 3 cents = _____
(c) 5 dimes and 8 cents = _____
(d) 9 dimes and 9 cents = _____
(e) 10 dimes and 0 cents = _____

4. How many tens are in 10? In 20? In 30?

5. What numbers should be written in the blank spaces? The first example shows you how.

21 = 2 tens and 1 one
44 = 4 tens and __ ones
35 = __ tens and 5 ones
29 = __ tens and 9 ones
23 = 3 ones and __ tens
36 = __ ones and __ tens
29 = __ ones and __ tens
37 = __ ones and __ tens

1 dime = 10 cents 1 ten = 10 ones

Cents and dimes are like ones and tens. 10 cents make 1 dime. 10 ones make 1 ten.

1. How much are 3 dimes and 2 dimes, in cents?

Long Way

3 dimes
2 dimes
5 dimes =
50 cents

Short Way

30 cents
20 cents
50 cents

3 dimes + 2 dimes = 5 dimes
Change 5 dimes to cents.
5 dimes = 50 cents

In the short way, change dimes to cents before you add.
3 dimes = 30 cents. 2 dimes = 20 cents. Add 30 and 20.
The sum is 50.
The money is equal to 50 cents.

2. How many cents are the same as 3 dimes and 4 cents plus 5 dimes and 3 cents?

Long Way

Dimes		Cents
3	and	4
5	and	3
8	and	7 =

87 cents

Short Way

34 cents
53 cents
87 cents

Add all the cents. 4 + 3 = 7
Add all the dimes. 3 + 5 = 8
The sum is 8 dimes and 7 cents.
8 dimes = 80 cents
80 cents + 7 cents = 87 cents

In the short way, change the money to cents. Then add.
3 + 4 = 7. Write 7 under 3.
3 + 5 = 8. Write 8 under 5.
The money is equal to 87 cents.

3. Add 2 dimes and 8 cents, and 5 dimes and 7 cents.

Long Way

Dimes		Cents
2	and	8
5	and	7
8	and	5 = 85 cents

Short Way

28 cents
57 cents
85 cents

Add the cents. $8+7=15$
15 cents equal 1 dime and 5 cents.
Write the 5 under cents' column.
Add the 1 dime in dimes' column.
Add 3 $(1+2)+5=8$
Write 8 under dimes' column.
8 dimes and 5 cents = 85 cents.

Change the money to cents.
Add ones' column. The sum is more than 9.
$8+7=15$. Write 5 in the sum.
Add the 1 to tens' column.
Add 3 $(1+2)+5=8$
The sum is 85 cents.

4. Add.

Long Way		Short Way
3 tens and 8 ones	=	38
1 ten and 5 ones	=	15

Add the short way. The sum of 8 ones and 5 ones is more than 9.
$8+5=13$. Say the steps to finish.

When the sum of ones' column is more than 9, add its tens' figure to tens' column.

Children Earning and Spending Money

1. Henry earned 25¢ one day and 39¢ the next day selling papers. How much did he earn in the two days?

To find how much he earned in the two days, write the numbers and add.

$$\begin{array}{r} 25¢ \\ 39¢ \\ \hline 64¢ \end{array}$$

Think, 5¢ and 9¢ are 14¢, or 1 dime and 4 cents. Write 4 under the 9.

Add the 1 to tens' column.

Think, 1 and 2 are 3, and 3 more are 6. Write 6 under 3.

The sum is 64 cents.

Henry earned 64 cents in the two days.

2. The boys sold 37 tickets for the basketball game and the girls sold 45 tickets. How many tickets were sold by the boys and girls?

To find how many tickets were sold, write the numbers in a column, and add.

$$\begin{array}{r} 37 \\ 45 \\ \hline 82 \end{array}$$

Think, 7 and 5 are 12, or 1 ten and 2 ones. Write 2 under ones' column.

Add the 1 to tens' column.

Think, 1 and 3 are 4, and 4 more are 8. Write 8 under tens' column.

The sum is 82. 82 tickets were sold.

3. Frank had 58 cents and Betty had 27 cents more than Frank. How much money did Betty have?

1. On her first turn Margaret jumped the rope 37 times without missing. On her second turn she jumped 29 times. How many times did she jump the rope in her two turns?

2. John and Frank started a stamp book. In the first month John pasted 65 stamps in the book and Frank pasted 28 stamps in it. How many stamps did the boys paste in their book the first month?

3. There are 35 pupils in grade two and 29 pupils in grade three. How many pupils are in both grades?

4. Add, and check your sums.

32	49	26	38	28	36	23	34	26
28	26	19	42	24	54	37	19	48
19	24	17	26	57	48	11	29	48
43	36	27	37	36	23	19	34	48

The Art Show

1. One grade had 46 pictures in the art show. Another grade had 63. How many pictures did the two grades have?

46
63
109

Begin at the right and add ones' column.
Think 9. Write 9 under ones' column.
Add tens' column. Think 10. Write 10 in the sum with 0 under the column added and the 1 in hundreds' place.
The sum is 109.
The two grades had 109 pictures in the show.

2. There were 44 large posters, 30 pictures of children, and 35 pictures of flowers. How many of these 3 kinds were there?

Write the sums on a paper. Then check.

3.	56	67	93	55	45	42	33	33
	82	51	36	94	92	75	42	60
4.	41	32	73	11	23	14	43	64
	22	43	82	32	20	11	51	60
	72	53	34	82	53	70	12	11
					52	54	30	42

Food Prices for Saturday

Dates (lb.) 30¢	Picnic Hams (lb.) 19¢
Honeydew Melons 18¢	Halibut Steak (lb.) 29¢
Lamport Cherries (lb.) 39¢	Homemade Sausage (lb.) 23¢
Pecan Fudge (lb.) 49¢	Coffee (lb.) 37¢
Peanut Brittle (lb.) 34¢	Tea (lb.) 65¢
Chipped Beef (lb.) 29¢	

(lb. means pound)

Add the prices to find how much to pay for

1. (a) 1 lb. dates and 1 lb. peanut brittle.
   (b) 1 lb. chipped beef and 1 lb. sausage.
   (c) 1 lb. coffee and 1 lb. tea.
   (d) 1 lb. halibut and 1 lb. coffee.
   (e) 1 lb. cherries and a honeydew melon.
   (f) 1 lb. peanut brittle and 1 lb. pecan fudge.
   (g) 1 honeydew melon and 1 lb. tea.
   (h) 1 lb. halibut steak and 1 lb. sausage.

Add, and check the sums.

2.	28	37	29	19	38	25	29	36	53
	6	24	17	28	43	25	18	45	28
3.	48	28	49	36	45	29	51	58	66
	19	25	11	48	27	39	29	46	29

Subtract, and check the remainders.

4.	36	28	25	37	49	51	56	36	76
	32	25	21	16	27	40	25	23	42

The numbers on this page are printed in words. In your work use figures to find the answers.

1. Add in columns.

(a) thirty-six, four, eighteen, ninety
(b) forty, seventeen, twenty-three, four
(c) eleven, forty-four, two, twenty-six, fifty-one

2. Carl had eighty stamps in his stamp book. He bought nineteen other stamps. How many stamps did he have then?

3. Subtract each of these numbers from sixteen.

seven eight nine four one five six

4. Ned helped his father in the store one day checking a list of numbers. Write these numbers that Ned's father read to him.

(a) eight dollars and thirty-five cents
(b) seventeen dollars and forty-eight cents
(c) four dollars
(d) thirty dollars and five cents
(e) sixty-five dollars and ten cents
(f) five dollars and five cents

5. Add eight to each of these numbers.

one	nine	seven	eight	fourteen
six	four	ten	two	seventeen

6. Subtract each of these numbers from fifteen.

two	eight	five	ten	twelve
four	three	nine	six	seven

1.

Add	Add	Subtract	Subtract	Add	Add
42	40	57	286	15	10
23	4	26	152	20	14
4	13			22	21
30	21			31	13

2. Subtract each of these numbers from 17.

7 2 5 9 6 8 1 3 4

3. Add 5 to each of these numbers.

5 8 6 15 9 11 7 10 4 12

4.

Add	Subtract	Add	Subtract	Add	Add
73	378	15	168	24	72
45	213	49	34	39	63

5. Read these numbers.

$9.47	$17.04	$ 9.00	$19.34	$40.05
$6.23	$25.10	$10.75	$32.08	$ 5.50

6. Fill in the blank spaces.

2 are _____ less than 7

15 take away 7 = _____

14 + 6 + 2 + 5 = _____

19 − 6 = _____

9 from 16 = _____

7 and 8 = _____

7. What is the answer to a subtraction example called? To an addition example?

The Children's School Cards

The teacher needed each pupil's name, age, and birthday for her records. She also needed his address and telephone number.

1. Here is a card which Marie's father wrote.

Name: Marie Sharpe Born: June 4, 1927 Address: 1442 Wells Street Telephone: Kenwood 5965

Read Marie's card like this:

Born: June fourth, nineteen twenty-seven Address: Fourteen forty-two Wells Street Telephone: Kenwood five, nine, six, five

2. This is John's card. Read it the way you read Marie's card.

Name: John Thorpe Born: April 6, 1926 Address: 1654 Park Street Telephone: Rosewood 7052

0 in telephone numbers is read like o in go.

3. Read this 4-figure number in different ways.

The address 1935 nineteen thirty-five
The year 1935 nineteen thirty-five
The telephone 1935 one, nine, three, five

Read what was written on the other pupils' cards.

1. Carl Rea
August 7, 1927
1732 Cross St.
Lakeside 7622

2. Laura Bell
December 24, 1927
1125 Hill Street
Summit 7168

3. Lucy Kress
August 19, 1927
4320 Brooks St.
Riverside 5140

4. Roy Hudson
February 28, 1928
1330 Ridge Street
Lakeside 7351

5. Charles Laton
July 6, 1928
1022 Fuller St.
Kenwood 6031

6. Jane Harper
September 16, 1927
4321 Hill Street
Riverside 8109

7. Betty Hall's mother has this card near her telephone. How does she say the numbers?

1.	Grocery—Lakeside 4269
2.	Cleaners—Summit 5410
3.	Market—Sunnyside 1413
4.	Bakery—Kenwood 4016
5.	Office—Riverside 6870
6.	Mrs. Ward—Summit 2301
7.	Mrs. House—Lakeside 3415
8.	Mrs. Hubbel—Sunnyside 3004
9.	Miss Stevens—Summit 0714
10.	Dr. Miller—Kenwood 4463

1. Count from 990 to 1000 (one thousand) by 1's. Begin 990, 991, 992.

2. What number is 1 more than 1000? It is 1001. It is read one thousand one. Read all such numbers without saying "and." How do you read 1002? 1003? 1004? 1005?

3. What number is 10 more than 1000? It is 1010. It is read one thousand ten. How do you read 1011? 1012? 1013?

4. What number is 50 more than 1000? It is 1050. It is read one thousand fifty. How do you read 1051? 1056? 1069? 1075?

5. Read these numbers without saying "and."

1001	1010	1020	1043	1072
1008	1015	1030	1063	1080

6. What number is 100 more than 1,000? It is 1100. It is read one thousand one hundred. How do you read 1200? 1300? 1600? 1900?

7. Say the number that should be in each blank.

1096,	____,	1098,	____,	1100,	1101,	____
1109,	1110,	____,	____,	1113,	____,	____
1224,	____,	____,	____,	1228,	____,	____
1496,	1497,	____,	1499,	____,	____,	1502

8. What number is 1 more than 1999? It is 2000. Read it two thousand. Read 2001, 2003.

9. Where do we write thousands in a number?

10. What number is 100 more than 2000? It is 2100. Read it two thousand one hundred. Count by 100's from 2000 to 2900. Begin 2000, 2100.

11. What number is 1000 more than 2000? It is 3000. Read it three thousand. Count by 1000's from 2000 to 10,000. Begin 2000, 3000.

12. Read these numbers.

1000	9010	1400	6503	9076
2000	3015	3500	1755	1100
4001	8025	7800	3842	3460
5008	7089	2220	10,325	10,300

13. John and his uncle took a trip. John wanted to know how many people lived in the towns they drove through. His uncle had a card showing the population of each town. See if you can read it.

Big Rapids	4671	Jonesville	1316
Chelsea	2071	Marshall	5019
Clinton	1026	Northville	2566
Hastings	5227	Reed City	1792
Hudson	2361	White Cloud	618
Lapeer	5008	Howell	3615

14. Sometimes four-figure numbers are read as hundreds. You may read 9500 as ninety-five hundred. Read 4300 in the two ways.

15. Read the population of the towns given in exercise 13 as hundreds.

1. Copy these two columns of numbers on a paper. Draw a straight line from each number in figures to the same number written in words. Look at (a) and 3. Look at (d) and 1.

(a) 4600	1. five thousand
(b) 8615	2. two thousand two
(c) 2002	3. four thousand six hundred
(d) 5000	4. five thousand seven hundred one..
(e) 5701	5. eight thousand six hundred fifteen
(f) 6990	6. nine thousand four
(g) 9004	7. six thousand forty
(h) 4400	8. five thousand seventy-five
(i) 6040	9. four thousand four hundred
(j) 5075	10. six thousand nine hundred ninety

2. Write the following numbers in order. Begin with the smallest, 1000.

5000	4000	8000	6000	1000
3000	9000	10,000	2000	7000

3. Copy, and in each part draw a line under the larger number. In part (a) the line is put under 2001 because it is larger than 1953. In part (b) 5000 is larger than 3654.

(a) 1953 or 2001
(b) 5000 or 3654
(c) 1110 or 1018
(d) 2200 or 2154
(e) 3042 or 1200
(f) 5000 or 7000
(g) 8764 or 9200
(h) 4375 or 2900
(i) 10,000 or 9999
(j) 6008 or 6002

4. Write these numbers in figures.

five thousand
nine thousand forty
three thousand six hundred
six thousand five hundred
two thousand
three thousand thirty
thirty-six hundred
sixty-five hundred
one thousand five hundred fifty
nine thousand nine hundred ninety-nine

5. Read these numbers.

1000 5500 8001 2500 6010 4550

Review in Addition and Subtraction

6. Subtract each of these numbers from 15.

8 5 6 10 7 3 9 4 12

7. Add 8 to each of these numbers.

9 7 4 6 8 2 10 14 17

8.

Add	Subtract	Add	Subtract	Add	Subtract
25	98	94	77	23	359
19	15	34	24	47	131
12				8	

9. Add. Watch the dollar sign and the decimal point.

$2.30	$6.14	$3.65	$3.02	$5.20	$2.38
3.55	6.03	4.24	5.83	2.75	5.38

Bob Likes Animal Stories

1. Bob read 3 books on animals. One book had 125 pages; one had 235 pages; and one, 224 pages. How many pages did Bob read in the 3 books?

To find how many pages he read, write the numbers in a column and add.

125
235
224
584

Begin at the right and add ones' column. Add down.

Think 10, 14. Write 4 under ones' column. Remember the 1. Add the 1 in tens' column.

Add tens' column.

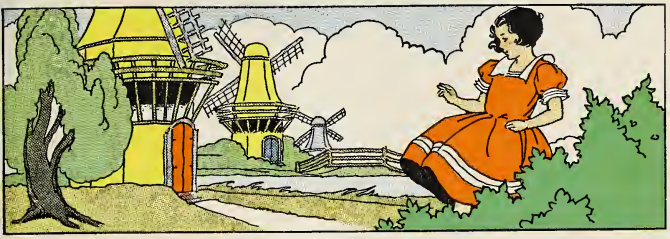
Think 3 (1 remembered and 2), 6, 8. Write 8 under tens' column.

Add hundreds' column.

Think 3, 5. Put 5 under hundreds' column.

The sum is 584. Bob read 584 pages.

In which column was the sum **more than 9?** What did you do in adding the next column?



2. Ann read 377 pages about Henrietta in the Land of Windmills. She read 363 pages and 342 pages in other books. How many pages did she read in these books?

Write the numbers in a column and add.

Add ones' column. Think 10, 12. Write 2 under ones' column and add the 1 in tens' column.

Add tens' column. Think 8 (1 and 7), 14, 18. Write 8 under tens' column and add the 1 in hundreds' column.

Add hundreds' column. Think 4 (1 and 3), 7, 10. Write 0 under hundreds' column and put 1 in thousands' place.

$$\begin{array}{r} 377 \\ 363 \\ 342 \\ \hline 1082 \end{array}$$

The sum is 1082. Ann read 1082 pages.

If the sum of a column is more than 9, write the ones' part of the sum under the column you added. Then add the other part of the sum in the next column to the left.

What the Other Pupils Read

Find how many pages these pupils read. What should you do when the sum of a column is more than 9? Check your answers.

1.

Dot	Ted	Fred	Marie	Alice	Patsy
258	267	356	247	285	365
327	286	288	329	292	287
299	298	379	294	359	303

2.

Joan	Bob	Jack	May	Bill	Edward
298	316	328	359	319	296
327	288	315	294	296	184
305	297	296	288	256	375

3. Which one of the pupils above read the greatest number of pages? The smallest number?

In the following examples add. Write the sums on a folded paper and check. Look out for columns that have sums less than 10.

4.

49	94	86	93	35	98	61	74
74	35	55	48	49	59	40	48
38	37	47	25	93	45	52	29
				18	11	23	65

5.

589	658	495	986	593	799
692	779	276	759	689	657
358	387	192	437	477	876

If you have any examples wrong, add them again.

To be strong in addition you should be able to say the sums in these examples in 5 minutes.

1.	1	1	2	2	1	3	5	1	8	7
	1	0	2	1	2	1	5	3	1	1
2.	2	1	9	0	6	4	1	4	8	3
	0	6	0	0	1	0	8	1	0	2
3.	3	7	1	1	5	0	0	5	0	2
	3	7	7	5	2	3	4	0	6	9
4.	1	9	0	6	3	5	0	6	5	7
	4	1	1	6	0	1	5	0	4	0
5.	0	2	1	2	0	4	4	0	7	0
	2	4	9	3	8	2	4	7	2	9
6.	4	2	9	4	2	8	8	8	5	6
	5	8	2	3	7	3	2	8	3	4
7.	3	6	3	7	3	3	4	3	6	8
	5	2	4	3	7	9	8	8	3	4
8.	6	3	4	9	2	5	9	2	7	6
	7	6	6	9	6	7	3	5	4	5
9.	9	9	5	7	8	7	8	4	4	9
	4	5	6	5	6	6	9	9	7	8
10.	6	5	8	7	5	9	6	9	7	8
	8	8	7	8	9	6	9	7	9	5

KNOWING THAT YOU KNOW

Write the sums on a folded paper. Work as fast as you can work carefully.

Test 1. Adding Easy Numbers

53	34	62	70	28	34	54	60
46	54	26	19	71	23	20	39

201	345	734	837	605	600
478	650	151	120	284	364

$1.20	$3.69	$7.83	$4.23	$3.72	$5.23
3.75	4.10	2.06	2.55	4.06	2.43

Test 2. Adding Harder Numbers

75	69	97	65	48	76	98	88	79
86	55	46	97	79	87	47	69	56

239	618	206	338	449	289
543	274	684	568	427	708

474	238	346	578	295	474
356	674	379	496	688	488

$3.78	$9.05	$7.70	$8.69	$3.19	$7.06
5.37	3.80	3.69	5.00	4.06	.95
7.49	4.99	5.89	4.99	.95	.48

Check. If you made mistakes in any test, work the exercise of the same number on page 133.

HELPING YOU TO KNOW

Write the sums on a folded paper.

Exercise 1. Adding Easy Numbers

70	54	34	60	34	53	28	62
19	20	54	39	23	46	71	26

345	600	837	201	605	734
650	364	120	478	284	151

$4.23	$7.83	$1.20	$5.23	$3.69	$3.72
2.55	2.06	3.75	2.43	4.10	4.06

Exercise 2. Adding Harder Numbers

98	97	79	48	75	76	69	88	65
47	46	56	79	86	87	55	69	97

289	578	474	239	238	206
708	496	488	543	674	684

499	618	474	295	346	338
427	274	356	688	379	568

$3.19	$7.70	$3.78	$8.69	$7.06	$9.05
4.06	3.69	5.37	5.00	.95	3.80
.95	5.89	7.49	4.99	.48	4.99

KNOWING THAT YOU KNOW

Subtract, and write remainders on a folded paper.

Test 1. One-Figure Numbers

9	6	8	7	9	5	7	8	4
5	5	3	4	3	4	2	6	3
8	8	9	9	7	7	6	6	5
2	5	6	4	5	3	3	5	3

Test 2. One-Figure from Two-Figure Numbers

17	12	14	15	15	13	16	18	15
8	5	9	8	5	4	7	9	6
13	16	12	14	15	17	13	16	12
6	9	8	6	7	9	7	8	3

Test 3. Easy Two-Figure Numbers

18	14	19	17	26	47	64	93	38
12	11	13	14	13	35	22	61	14
59	76	37	68	95	79	84	46	59
25	34	26	13	70	27	64	40	32

Test 4. Easy Three-Figure Numbers

754	826	985	638	579	893	687
523	614	473	503	452	560	302
697	958	684	375	863	789	436
251	802	242	301	752	536	301

If you made mistakes on any test, work the exercise of the same number on page 135.

HELPING YOU TO KNOW

Subtract. Write remainders on a folded paper.

Exercise 1. One-Figure Numbers

6	9	9	6	9	8	5	8	4
5	5	6	3	3	3	3	5	3
8	7	8	7	6	9	7	5	7
6	3	2	4	5	4	5	4	2

Exercise 2. One-Figure from Two-Figure Numbers

16	17	14	16	13	17	13	12	15
8	9	6	9	6	8	4	3	7
12	15	12	15	16	14	15	18	13
8	8	5	6	7	9	5	9	7

Exercise 3. Easy Two-Figure Numbers

26	59	59	84	37	64	46	76	17
13	32	25	64	26	22	40	34	14
68	38	18	79	93	14	47	95	19
13	14	12	27	61	11	35	70	13

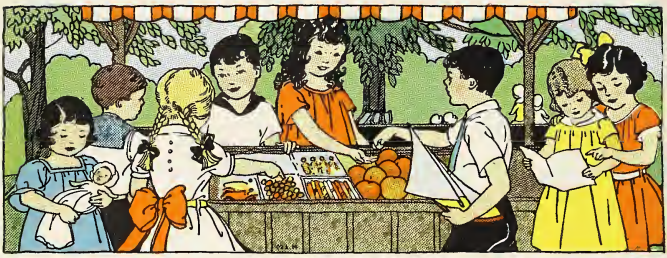
Exercise 4. Easy Three-Figure Numbers

958	985	436	863	697	789	687
802	473	301	752	251	536	302
375	754	684	579	826	893	638
301	523	242	452	614	560	503

CHAPTER 4

SUBTRACTION

Changing Columns in Subtraction



The School Fair

The children of grade four had a fair. The children of grade three all wanted to buy things.

1. Tom had 43¢. He spent 25¢ for a boat and the rest for candy. What did the candy cost?

To find the answer, subtract 25¢ from 43¢.

43
25
18

You cannot take 5¢ from 3¢. Why?

Add 1 dime or 10¢ to the 3¢, making 13¢.

Add 1 dime to the 2 below, making 3.

Now subtract. 5 from 13 = 8. Write 8 in ones' place in the remainder.

3 (2+1) from 4 = 1. Write 1 in tens' place in the remainder. The remainder is 18¢.

The candy cost 18 cents.

2. Alice had 34¢. She spent 15¢ for ice cream and candy. How much did she have left?

To find how much Alice had left, subtract 15¢ from 34¢.

34
15
19

Think, 4 is less than 5.
Add 10 to 4, making 14. Add 1 to 1, making 2.
Think, 5 from 14 = ____. Write 9 in the remainder.
Think, 2 from 3 = ____. Write 1.
Alice had ____¢ left.

In subtraction, if the upper figure in a column is less than the lower figure, add 10 to it and add 1 to the next lower figure to the left. This does not change the remainder.

3. A doll's hat cost Marie 19¢. How much did she have left from 33¢?

4. Bob had 45¢ and spent 26¢ for a little cart. How much did he have left?

5. Jane saw a doll's dress marked 15¢ and bought it. How much did she have left from 31¢?

6. Sue had 43¢ and spent 25¢ for a doll's sweater. How much did she have left?

7. For 17¢ Gene can buy a wooden rabbit. How much would he have left from 36¢?

Read and give remainders without using a pencil.

	A	B	C	D	E	F	G	H	I
1.	11	10	9	10	11	12	7	13	12
	4	4	4	8	3	9	4	6	8
2.	15	10	14	11	9	9	8	11	7
	9	3	7	7	7	2	2	6	6

In the first example below, add 10 to the 4 and think 1 in the lower space before 9. Then subtract. Work the other examples the same way.

3.	34	96	42	54	77	61	63	73	55
	9	7	6	8	9	2	8	7	9
4.	41	83	37	95	22	51	85	28	93
	4	9	8	8	4	8	7	9	5

Tell what you should do when the figure to be subtracted is larger than the figure above it.

In each of the examples below, give the figure that is missing in the answer. Check answers.

5.	24	52	72	32	24	46	53	63	65
	9	5	6	3	8	8	7	9	8
	5	7	6	9	6	8	6	4	7
6.	65	73	37	75	96	84	54	91	73
	7	5	9	6	9	6	5	8	4
	8	8	8	9	7	8	9	3	9

Subtract. Watch the zeros. Write the remainders on a folded paper, and check them.

	A	B	C	D	E	F	G	H
1.	20	51	82	42	64	40	20	50
	4	4	7	6	7	3	3	6
2.	39	50	51	61	40	72	50	43
	5	7	7	6	2	8	2	6
3.	28	32	80	90	91	70	80	36
	3	5	2	8	3	5	1	7

Read and give the remainders.

4.	72	63	70	48	40	52	23	12
	8	7	7	5	9	7	6	3
5.	19	80	71	98	82	51	60	64
	6	9	2	8	9	7	5	9

Look at the first example below. The tens' figure in the remainder would be 0. Remember, we do not write 0 when it is the first figure in a remainder. $21-18=3$.

Subtract, and write the remainders on paper.

6.	21	20	62	80	51	35	50	35
	18	17	44	68	35	24	31	20

If you had any examples on this page wrong, do them again. Then check.

Weighing the Children at School

The third grade children were weighed in September. They had a record sheet at the scale to show what they should weigh at their age. This is called "normal weight."

If their weight was more than normal weight, they were "overweight." If it was less than normal weight, they were "underweight."

1. Marion weighed 49 lb. Her normal weight was 57 lb. Was she underweight or overweight?

Subtract
57
49
8

Check
49
8

To find how much Marion was underweight, find the difference between 49 and 57.

The difference between 57 and 49 is 8.

Marion is 8 lb. underweight.

To check the answer, add 49 and 8. Is 8 lb. the right answer? Why?

2. Tom stood on the scale after Marion. He weighed 71 lb. His normal weight was 67 lb. Was he underweight or overweight? How much?

Subtract
71
67
4

Check
67
4

To find how much Tom was overweight, find the difference between 71 and 67.

The difference is 4.

Tom is 4 lb. overweight.

What numbers must you add to check the answer? Can you add them without writing them again?

Is 4 lb. the right answer? Why?

Finish the problems below and check.

3. Jack's weight was 68 lb. He should weigh 70 lb. Was he underweight or overweight?

4. Alice weighed 49 lb. Her normal weight was 60 lb. Was she underweight or overweight?

5. The record showed that Margaret should weigh 56 lb. She weighed 52 lb. Was she underweight or overweight?

6. George weighed 75 lb. His normal weight was 69 lb. Was he underweight or overweight?

7. Billy should weigh 69 lb. He weighed 76 lb. Was he underweight or overweight?

8. Bob weighed 68 lb. His normal weight was 71 lb. Was he underweight or overweight?

Subtraction with and without Changing Tens

Subtract and write remainders on a folded paper. Then check.

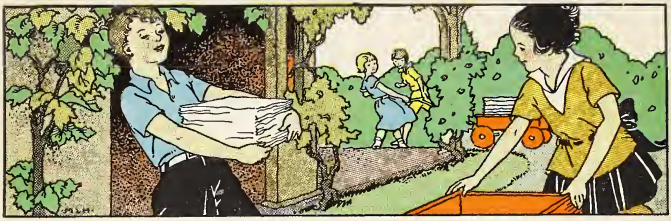
	A	B	C	D	E	F	G	H	I
1.	60	72	83	71	65	51	94	80	72
	57	66	65	46	48	45	77	62	37
2.	53	80	62	73	70	82	93	92	72
	49	66	48	17	64	65	44	54	43
3.	60	63	74	60	85	51	61	71	22
	41	46	38	53	67	44	53	47	16
4.	92	93	91	64	94	52	41	22	85
	86	75	56	56	77	44	37	19	56
5.	92	53	83	82	71	32	42	53	52
	68	17	48	53	19	27	35	34	34
6.	90	84	91	31	35	71	94	64	72
	51	68	54	17	27	63	65	49	33
7.	68	49	87	83	66	99	77	96	87
	27	35	47	78	59	84	51	58	78
8.	82	81	89	95	98	75	81	96	87
	39	59	63	38	82	46	70	30	37
9.	71	79	58	37	33	74	64	44	65
	60	67	53	2	5	28	25	36	59

A Weight Chart

1. This record shows the weight of each child and his normal weight. Each line is a subtraction problem. Find out if the child is underweight or overweight, and how much.

	Name	Weight Sept. 14	Normal Weight	Difference	Pounds Overweight	Pounds Underweight
1	Jane	47	50	3		3
2	Jimmy	49	53	4		4
3	Alice	69	60	9	9	
4	Henry	52	53			
5	Edith	49	54			
6	Anne	59	61			
7	Jack	68	70			
8	Ted	56	60			
9	Tony	68	71			
10	Tom	67	71			
11	Grace	70	63			
12	Harry	57	65			
13	Ethel	75	67			
14	George	69	75			
15	Billy	69	76			
16	Ralph	72	65			
17	Arthur	69	70			

2. Now make a record like this one and show on it how much each child is underweight or overweight.



Selling Old Paper

For two weeks the children in Grant school sold old paper to raise money for the school library.

1. The first grade got \$1.20 the first week and \$1.56 the second week. Was the amount the second week more or less? How much?

Find the difference between \$1.56 and \$1.20.

Be sure the decimal points are in a straight line and subtract.

\$1.56
1.20
\$ .36

Think, 0 from 6 = 6. Write 6 in the remainder.

Think, 2 from 5 = 3. Write 3 in the remainder.

Place the decimal point under the other decimal point.

Think, 1 from 1 = 0. Do not write 0.

Write the dollar sign.

The remainder is \$.36. Read "36 cents."

The amount was \$.36 larger.

Check by adding \$.36 and \$1.20.

2. The second grade got \$1.94 the first week and \$1.45 the second week. Was the amount of money the second week more or was it less than the amount the first week? How much?

\$1.94
1.45

3. The third grade got \$2.10 the first week and \$2.29 the second week. Was the amount of money the second week more than the first week, or was it less? How much?

\$2.29
2.10

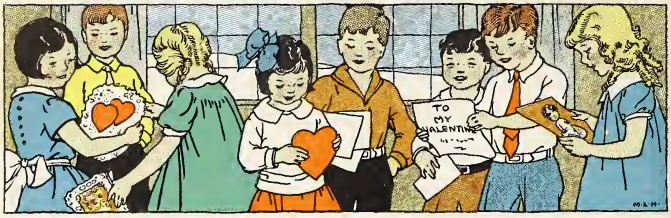
In subtracting dollars and cents, be sure all decimal points are in a column. Place a dollar sign at the left of the upper number and at the left of the remainder.

4. The fourth grade got \$2.78 the first week and \$1.56 the second. Was the amount the second week more than the first week, or less? How much?

5. The fifth grade got \$1.80 the first week and \$2.95 the second. Was the amount the second week more than the first week, or less? How much?

6. The sixth grade got \$2.45 the first week and \$3.69 the second. Was the amount the second week more than the first week, or less? How much?

7. The seventh grade got \$2.32 the first week and \$3.57 the second. Was the amount the second week more than the first week, or less? How much?



St. Valentine's Day

Read each problem. Tell if you should add or subtract. Then find the answer.

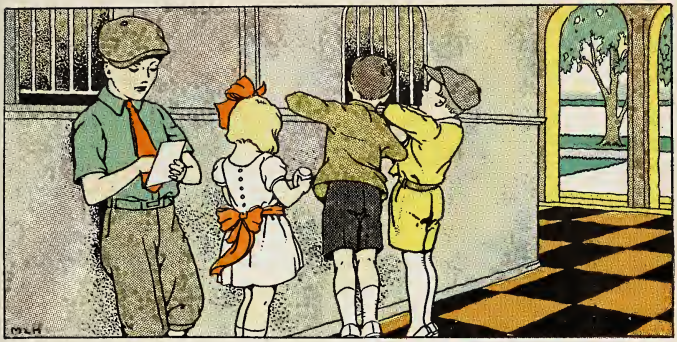
1. On St. Valentine's Day the children sent valentines to each other. Bob got 5 valentines and Jim got 3. How many more valentines did Bob get than Jim?

2. Ruth got 7 valentines in the post office. Marie got 6. June got 4. How many valentines did these three girls get?

3. Some of the children sent comic valentines. Tom got 2 comics. He got 7 valentines in all. How many of them were not comics?

4. Billy brought 4 valentines. How many more did he need if he sent one to each of 6 children?

5. Lou paid 35 cents for fancy valentines, 6 cents for comics, and 12 cents for one with Cupid shooting an arrow through a red heart. How much did Lou pay for these valentines?



In each problem tell if you should add or subtract to get the answer. Then find the answer.

1. Joe Ellis had $43 in the bank. On Saturday he put $18 more in the bank. How much money did Joe then have in the bank?

2. The bank book showed that Claire had $54 in the bank. She took out $17 to buy clothing. How much of her money did she leave in the bank?

3. Fred Mason had 27 white hens and 15 brown hens. How many hens of both kinds did he have?

4. After school Marie started home at 3:15. She reached home at 3:45. How many minutes did it take Marie to go home?

5. Carl lives 27 miles from John and 19 miles from Robert. How much farther must Carl go to visit John than to visit Robert?

Jack's Visit to His Cousins

1. When Jack went to see his cousins in Canada last summer, he drove 325 miles the first day. He drove 243 miles the second day. How much farther did Jack drive on the first day of his trip than on the second day?

To find how much farther Jack drove the first day, subtract 243 from 325.

Write numbers in a column.

$$\begin{array}{r} 325 \\ 243 \\ \hline 82 \end{array}$$

Think, 3 from 5 = 2. Write 2 in the remainder.

4 is more than 2. Add 10 to 2, making 12.

Add 1 to lower 2, making 3.

Think, 4 from 12 = 8. Write 8.

Think, 3 from 3 = 0. Do not write 0.

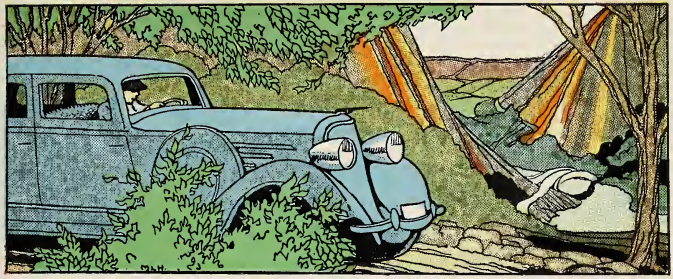
The remainder is 82.

Jack drove 82 miles farther the first day than he drove the second day.

Check: Add 82 and 243.

Remember what you learned to do in subtraction if a figure in the upper number is less than the figure below it. What should you do?

Ten in any column is the same as one in the next column to the left.



Sometimes you have 0 in the upper number.

1. Richard drove 248 miles to visit his brother. On the way home he drove 400 miles by a different road to see Washington. How many more miles did he drive coming home than going?

400
248
152

Subtract as you do with other numbers.
Add 10 to 0 above 8. Add 1 to 4 below.
Think, 8 from 10 = 2. Write 2 under 8.
Add 10 to 0 above 4. Add 1 to 2 below.
Think, 5 from 10 = 5. Write 5 under 4.
Say the steps to finish the problem.

When you have zeros in the upper number in subtraction, add 10 to 0 above and 1 to the next figure to the left below.

2. Find remainders and check.

370	405	621	500	340	808	602
275	239	522	199	234	109	403

Raising Money for the School Band

On the first and second Fridays in October each grade in the Clay school had a penny circus. They raised money for the school band.

1. Find how much more money or how much less money each of these two grades got the second Friday than the first Friday.

First Grade	Second Grade
\$1.63—second Friday	\$3.90—second Friday
1.54—first Friday	1.76—first Friday

2. Make a record like the one below. Put your answer in the correct place on your record.

Grade	First Friday	Second Friday	Second Friday	
			More	Less
First	\$1.54	\$1.63		
Second	1.76	3.90		
Third	2.47	1.38		
Fourth	3.92	2.45		
Fifth	2.44	4.51		
Sixth	1.75	2.82		
Seventh	2.09	1.06		
Eighth	2.63	1.56		

Subtract. Then check your remainders.

3.

\$3.91	\$4.94	\$4.73	\$2.33	\$3.92	\$5.91
2.45	2.46	1.47	1.28	1.73	2.78

KNOWING THAT YOU KNOW

1. Harry had 614 stamps and gave away 208 of them. How many stamps did Harry have left?

2. Louise had collected 513 stamps. Marie gave her 54 stamps, and Sally gave her 119 stamps. How many stamps did she have in all?

3. Virginia has $4.05. How much will she have left after she spends $3.90 for Christmas presents?

4. Bertha had $1.30. Bertha's father gave her $2.08 and her mother gave her $.97. How much money did Bertha have when she put it all together?

5. Give the answers.

3 from 8 =	6 and 7 =	6 from 15 =	7 and 4 =
2 from 6 =	4 and 5 =	4 from 13 =	6 and 18 =

6. Subtract. Check the remainders.

721	215	250	7632	350	206	8650
386	158	190	4289	175	46	5335

7. Write each two amounts of money in a column and add. One example is written to show you how.

(a) $3.98 and $6.76
(b) $5.04 and $4.92
(c) $ .95 and $2.83
(d) $5.21 and $1.96
(e) $8.56 and $ .97

(a)
$ 3.98
6.76
$10.74

HELPING YOU TO KNOW

1. Subtract.

\$5.95	\$7.78	\$3.07	\$4.65	\$3.00	\$6.70	\$8.00
4.97	7.69	2.98	1.46	2.95	3.63	4.21

2. Write each of these examples in a column and add the numbers. Look at example (a) in the box.

(a) 3, 15, 8, 40, 69
(b) 7, 52, 36, 8, 6
(c) 8, 16, 17, 9, 11
(d) 16, 7, 64, 29, 5
(e) 8, 25, 30, 9, 6

(a)
3
15
8
40
69

3. Add, and check sums.

72	60	25	64
54	8	70	97
26	79	97	88
39	47	52	61
47	64	83	27

4. Add. Check sums.

9	4	9	5	5
1	8	7	4	9
5	6	9	7	6
7	9	7	9	8
8	4	4	7	9
9	9	7	8	2
3	4	4	6	6
1	7	3	2	3

5. Subtract, and check remainders.

3243	4061	3651	2004	2256	3230	2260
1368	1572	2798	1036	1672	2178	1375

To be strong in subtraction you should be able to say all the remainders in 5 minutes.

1.	10	9	2	0	3	4	4	3	8	4
	5	1	1	0	2	1	3	1	1	2
2.	9	9	7	11	2	4	7	5	8	5
	8	9	6	5	0	0	1	1	0	2
3.	8	6	14	6	8	5	7	11	7	12
	7	3	7	5	4	0	0	6	7	4
4.	12	5	10	10	6	8	3	6	3	9
	6	4	2	1	2	6	0	0	3	0
5.	5	2	6	8	1	1	10	4	5	6
	5	2	1	8	0	1	9	4	3	6
6.	6	9	7	9	7	9	11	8	16	9
	4	6	2	2	3	5	3	3	8	7
7.	8	10	9	11	7	7	10	12	12	11
	5	8	3	8	5	4	3	8	9	2
8.	13	11	10	9	10	18	10	8	12	17
	6	4	7	4	6	9	4	2	3	8
9.	13	14	11	17	11	13	13	14	12	14
	4	5	7	9	9	9	7	6	5	9
10.	12	14	15	15	15	15	16	13	16	13
	7	8	6	8	7	9	7	8	9	5

KNOWING THAT YOU KNOW

Write the remainders on a folded paper.

Test 1. Subtracting Easy Two-Figure Numbers

26	65	97	48	56	79	87	34
14	43	35	23	20	36	60	21
58	74	96	87	59	68	99	78
32	40	53	53	27	20	49	30

Test 2. One-Figure Numbers from Two-Figure Numbers

10	17	15	14	18	13	12	16	11
5	8	7	6	7	5	9	7	3
16	11	12	11	10	13	14	16	17
9	9	3	8	3	6	5	8	9

Test 3. Subtracting Larger Numbers

36	93	47	55	52	67	55	73	81
28	85	39	26	46	29	28	38	47
70	80	40	90	60	50	30	80	40
25	66	37	53	32	46	18	74	29

$2.35	$5.64	$4.73	$8.32	$7.67	$9.55
1.20	3.51	2.06	4.19	3.08	3.46
429	537	816	738	339	946
185	264	472	274	157	193

If you made mistakes on any test, work the exercise of the same number on page 155.

HELPING YOU TO KNOW

Subtract. Write the remainders on a folded paper.

Exercise 1. Subtracting Easy Two-Figure Numbers

56	87	78	99	96	65	79	26
20	53	30	49	53	43	36	14
87	74	46	58	59	34	97	68
60	40	23	32	27	21	35	20

Exercise 2. One-Figure from Two-Figure Numbers

13	12	11	10	16	10	16	15	18
5	3	3	5	8	3	9	7	7
12	14	17	17	14	11	13	14	16
9	9	8	9	6	8	6	5	7

Exercise 3. Subtracting Larger Numbers

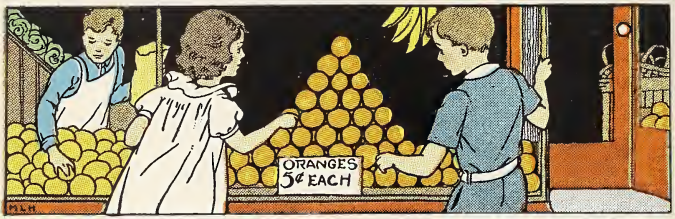
47	67	81	40	36	80	90	55	93
39	29	47	37	28	74	53	26	85
70	40	73	60	80	30	52	55	50
25	29	38	32	66	18	46	28	46

$4.73	$9.55	$5.64	$7.67	$2.35	$8.37
2.05	3.46	3.51	3.08	1.20	4.19
339	816	946	429	738	537
157	472	193	185	274	264

CHAPTER 5

LEARNING TO MULTIPLY NUMBERS

Multiplying 5 by a Number



Dick and Esther Buying Oranges

Dick and Esther tried to find how much each row would cost. They counted 5¢ for each orange.

1. Read the first line, "1 orange costs 5¢." Read all the lines and say the correct numbers for the blanks.

1 orange costs 5¢
2 oranges cost 5¢+5¢=10¢
3 oranges cost 5¢+5¢+5¢=____
4 oranges cost 5¢+5¢+5¢+5¢=____
5 oranges cost 5¢+5¢+5¢+5¢+5¢=____
6 oranges cost 5¢+5¢+5¢+5¢+5¢+5¢=____
7 oranges cost 5¢+5¢+5¢+5¢+5¢+5¢+5¢=____
8 oranges cost 5¢+5¢+5¢+5¢+5¢+5¢+5¢+5¢=____
9 oranges cost 5¢+5¢+5¢+5¢+5¢+5¢+5¢+5¢+5¢=____

2. In exercise 1 you found the cost of the oranges by counting and adding. Here is a shorter way. Read these lines four or five times.

1 orange = 5¢	one 5 = 5	1 times 5 = 5
2 oranges = 10¢	two 5's = 10	2 times 5 = 10
3 oranges = 15¢	three 5's = 15	3 times 5 = 15
4 oranges = 20¢	four 5's = 20	4 times 5 = 20
5 oranges = 25¢	five 5's = 25	5 times 5 = 25
6 oranges = 30¢	six 5's = 30	6 times 5 = 30
7 oranges = 35¢	seven 5's = 35	7 times 5 = 35
8 oranges = 40¢	eight 5's = 40	8 times 5 = 40
9 oranges = 45¢	nine 5's = 45	9 times 5 = 45

3. How much will 4 oranges cost at 5¢ each?

4. Count by 5's to 50, saying 5 = one 5, 10 = two 5's, 15 = three 5's.

5. Say the answers:

two 5's =	four 5's =	6 times 5 =	7 times 5 =
three 5's =	eight 5's =	3 times 5 =	2 times 5 =
five 5's =	six 5's =	8 times 5 =	5 times 5 =
seven 5's =	nine 5's =	4 times 5 =	9 times 5 =

1 nickel = 5 cents

6. How many cents are in 4 nickels? In 6 nickels? In 3 nickels? In 9 nickels? In 7?

Multiplication is a short way of adding equal numbers.

1. An exercise in multiplication may be written like this:

$$2 \times 5 = 10$$

It is read **2 times 5 = 10**

$\times$ is the sign for multiplication. It is read **times.** It tells you to **multiply.**

2. Read these exercises and give the answers.

$3 \times 5 =$	$8 \times 5 =$	$6 \times 5 =$	$9 \times 5 =$
$5 \times 5 =$	$2 \times 5 =$	$7 \times 5 =$	$7 \times 5 =$
$7 \times 5 =$	$4 \times 5 =$	$9 \times 5 =$	$8 \times 5 =$
$1 \times 5 =$	$9 \times 5 =$	$4 \times 5 =$	$3 \times 5 =$

The answer in multiplication is the product.

3. An example in multiplication is often written like this.

Multiply
5
2
10

The word over 5 tells you what to do. Read the example, 2 times 5 equals 10. Read it the same as, $2 \times 5 = 10$. The product is 10.

4. Multiply. Say the **products** quickly.

5	5	5	5	5	5	5	5
5	3	6	7	1	8	4	7
5	5	5	5	5	5	5	5
4	2	7	5	8	6	9	3

Buying Things at Five Cents Each

1. Gene's candy bar costs 5 cents. What will 6 candy bars cost?

2. At 5 cents each, how much will 8 oranges cost?

3. Barbara pays 5 cents for a box of crayons. How much will 9 boxes cost?

4. The tickets for the show are 5 cents each. How much will the tickets for 5 children cost?

5. Popcorn costs 5 cents a bag. What will 2 bags of popcorn cost?

6. Ice cream cones are 5 cents each. What will 7 cones cost?

7. One quarter dollar equals 5 nickels. How many nickels do 3 quarters equal?

8. Four tablets at 5 cents each will cost how much?

Tickets for the Boys' Show

1. Frank and Harry will give a show in their tent. How much money must their 5 friends pay for tickets, if the tickets are 1¢ each?

2. How much must they pay for tickets at 2¢ each? At 3¢? 4¢? 5¢? 6¢? 7¢? 8¢? 9¢?

3. Frank and Harry started to make a table. They added to show how much the tickets would cost at these prices. Copy and finish their table.

1¢	2¢	3¢	4¢	5¢	6¢	7¢	8¢	9¢
1¢	2¢							
1¢	2¢							
1¢	2¢							
1¢	2¢							
5¢	10¢							

4. You can find the cost more quickly by multiplying. Read this table.

5 tickets at 1¢ each	five 1's	$5 \times 1 = 5$
5 tickets at 2¢ each	five 2's	$5 \times 2 = 10$
5 tickets at 3¢ each	five 3's	$5 \times 3 = 15$
5 tickets at 4¢ each	five 4's	$5 \times 4 = 20$
5 tickets at 5¢ each	five 5's	$5 \times 5 = 25$
5 tickets at 6¢ each	five 6's	$5 \times 6 = 30$
5 tickets at 7¢ each	five 7's	$5 \times 7 = 35$
5 tickets at 8¢ each	five 8's	$5 \times 8 = 40$
5 tickets at 9¢ each	five 9's	$5 \times 9 = 45$

If you cannot say the answers quickly for exercises 1 and 2, look at the table on page 160.

1. How much will these things cost?

5 rulers at 5 cents each
5 tops at 7 cents each
5 horns at 9 cents each
5 cups at 4 cents each

2. Read the lines below and say the numbers to fill the blanks.

5 times 3 books are _____ books.
5 times 7 marbles are _____ marbles.
5 times 8 pencils are _____ pencils.

3. Write the products on a paper.

five 7's = five 9's = five 6's = five 5's =
five 2's = five 8's = five 3's = five 4's =

4. Copy and fill the blank spaces.

$5 \times ____ = 40$ $5 \times ____ = 30$ $5 \times ____ = 20$
$5 \times ____ = 25$ $5 \times ____ = 15$ $5 \times ____ = 35$
$2 \times ____ = 10$ $1 \times ____ = 5$ $9 \times ____ = 45$

$5 \times 5 = ____$ $3 \times 5 = ____$ $6 \times 5 = ____$
$8 \times 5 = ____$ $2 \times 5 = ____$ $9 \times 5 = ____$

5. Multiply and find the products.

A	B	C	D	E	F	G	H
2	4	7	6	9	3	5	8
5	5	5	5	5	5	5	5
7	3	6	4	8	2	9	5
5	5	5	5	5	5	5	5

How the Pupils Use Multiplication

Ink erasers	5¢ each	Apples	3¢ each
Pencils	2¢ each	Lemons	3¢ each
Ice cream cones	5¢ each	Oranges	5¢ each
Candy bars	4¢ each	Grapefruit	9¢ each

Tell how much money each pupil had to pay for the things he bought at the prices above.

1. John bought 2 ink erasers.
2. Fred bought 5 pencils.
3. Sue bought 4 ice cream cones.
4. Doris bought 5 candy bars.
5. Junior bought 5 apples.
6. Carl bought 5 lemons.
7. Pauline bought 6 oranges.
8. Bob bought 8 ice cream cones.
9. Marion bought 5 grapefruit.
10. Patsy started her bank with 7 nickels. How much money was that?
11. Ruth went to camp and stayed 5 weeks. How many days did she spend at camp? (1 week = 7 days)
12. Mr. Jones works in his office 6 days every week. In 5 weeks how many days does he work?
13. If a man works 8 hours a day, how many hours will he work in 5 days?
14. Sarah spent 9 nickels for car fare this week. How many cents did she spend for car fare?

1. Copy these examples and write the products.

three 5's =	5 fives =
six 5's =	5 sixes =
two 5's =	5 fours =
nine 5's =	5 nines =
seven 5's =	5 twos =
one 5 =	5 eights =
four 5's =	5 ones =
eight 5's =	5 threes =
five 5's =	5 sevens =

2. What examples in exercise 1 have a product of 10? of 25? of 45? of 40? of 35? of 30?

3. Copy and write the products.

$4\times5=$	$3\times5=$	$9\times5=$
$5\times4=$	$5\times3=$	$5\times9=$
$6\times5=$	$5\times7=$	$5\times2=$
$5\times6=$	$7\times5=$	$2\times5=$
$5\times8=$	$1\times5=$	$5\times5=$
$8\times5=$	$5\times1=$	

4. Do you see that the product of 4×5 is the same as 5×4? That the product of 5×7 is the same as 7×5?

When two numbers are multiplied, either number may come first. The product is always the same.

1. Copy. Place the correct sign in each blank to make the answer right.

5 × 1 = 5	5 × 0 = 0	3 5 = 15	6 5 = 30
7 − 3 = 4	5 4 = 20	14 8 = 6	9 8 = 17
5 + 5 = 10	13 6 = 7	5 7 = 35	5 9 = 45

2. See how quickly you can give the products.

five 5's =	5 × 4 =	5 × 9 =	nine 5's =
three 5's =	7 × 5 =	9 × 5 =	eight 5's =
seven 5's =	5 × 6 =	8 × 5 =	two 5's =

3. Add and check.

7	3	6	7	8	9	9	5
2	8	6	3	0	7	3	7
6	5	3	8	5	6	4	9
3	7	6	6	6	0	7	8
4	6	2	1	7	5	5	4

4. Write remainders on a folded paper. Check.

73	64	73	90	$7.30	$6.08	$3.55
8	57	60	68	4.87	4.92	2.97

5. Write your sums on a folded paper. Check.

79	39	48	80	$1.35	$3.84	$7.00
54	69	56	60	3.96	6.79	5.68

6. Read, and say the correct answers.

24 − 8 =	8 × 5 =	15 − 7 =	22 + 8 =
15 + 6 =	5 × 7 =	9 × 5 =	17 − 8 =
33 − 9 =	16 + 8 =	5 × 3 =	4 × 5 =

Thinking about What We See

Read each problem carefully. Then tell if you should add, subtract, or multiply. Then answer the question in the problem.

1. One day Fay saw 11 robins and 6 blackbirds. How many more robins than blackbirds did she see?

2. In Earl's chicken yard there are 5 mother hens. Each mother hen has 9 chicks. How many chicks have these 5 hens?

3. The first hour 74 boys used the gym for games. The second hour 59 girls were there. How many pupils used the gym in the two hours?

4. Bob spent $2.75 for gym shoes and $3.50 for a cap and a pair of gloves. How much less did the shoes cost than the cap and gloves?

5. Eleanor bought a hat for $2.25 and a sweater for $3.95. How much did the hat and sweater cost?

6. In going to and from school Hazel walks 7 blocks every school day. How many blocks does she walk in 5 school days?

7. Tom wants to buy skates and clothing that cost $15. He has $9. How much more money does he need to buy the skates and clothing?

8. Jean baked 5 pans of cookies. There were 6 cookies in each pan. How many cookies were in the 5 pans?

1. Find how much these colored pencils will cost, counting 2 cents for each pencil.

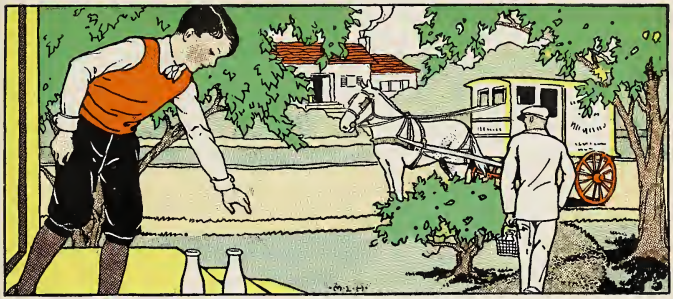
1 pencil		5 pencils	
2 pencils		6 pencils	
3 pencils		7 pencils	
4 pencils		8 pencils	
		9 pencils	

2. Count to 20 by 2's, saying 2 = one 2; 4 = two 2's; 6 = three 2's.

3. You found the cost of the pencils by counting. Now find the cost by multiplying. Read this table.

1 pencil costs 2¢	one 2	1×2= 2
2 pencils cost 4¢	two 2's	2×2= 4
3 pencils cost 6¢	three 2's	3×2= 6
4 pencils cost 8¢	four 2's	4×2= 8
5 pencils cost 10¢	five 2's	5×2=10
6 pencils cost 12¢	six 2's	6×2=12
7 pencils cost 14¢	seven 2's	7×2=14
8 pencils cost 16¢	eight 2's	8×2=16
9 pencils cost 18¢	nine 2's	9×2=18

4. If one colored pencil costs 2 cents, how much must you pay for 6 pencils? 5 pencils? 9? 4? 7? 3?



Milk for the Family

1. The milkman left 2 pints of milk at Bob's house and 2 pints at Jim's house. How many pints of milk did he leave at the two houses?

2 pt.	Multiply 2 pints by 2.
2	$2 \times 2 = 4$.
4 pt.	He left 4 pints of milk.

2. At each of two homes across the street from Bob and Jim the milkman left 1 quart bottle of milk. He left 2 quarts of milk on that side of the street. How many pints are the same as 2 quarts?

1 qt. = 2 pt.	4 pints are the same as 2 quarts.
2 qt. = 2 times 2 pt.	
$2 \times 2 = 4$	

The amount of milk was the same, whether it was in 4 pint bottles or in 2 quart bottles.

1. Say the answers. If you cannot say them quickly, look at the table on page 166.

one 2 =	six 2's =	8 times 2 =
five 2's =	three 2's =	2 times 2 =
seven 2's =	four 2's =	4 times 2 =
two 2's =	7 times 2 =	6 times 2 =
nine 2's =	3 times 2 =	9 times 2 =
eight 2's =	1 times 2 =	5 times 2 =

2 pints = 1 quart
2 pt. = 1 qt.

2. Copy and write the correct answers.

2 qt. = ____ pt.	6 qt. = ____ pt.	1 qt. = ____ pt.
4 qt. = ____ pt.	8 qt. = ____ pt.	5 qt. = ____ pt.
7 qt. = ____ pt.	9 qt. = ____ pt.	3 qt. = ____ pt.

3. Read these exercises and say the answers.

$3\times2=$	$4\times2=$	$8\times2=$	$9\times2=$
$6\times2=$	$1\times2=$	$6\times2=$	$4\times2=$
$5\times2=$	$9\times2=$	$2\times2=$	$7\times2=$
$8\times2=$	$7\times2=$	$7\times2=$	$8\times2=$

4. Write the products on a folded paper.

2	2	2	2	2	2	2	2	2
5	9	4	6	8	7	5	9	6
2	2	2	2	2	2	2	2	2
7	4	5	8	6	9	7	8	6

Buying Things for the Pupils

The teacher sent Helen to a store near the school to buy things for two new pupils in the second grade. Here is a record of what Helen bought.

	Things Helen Bought	Price of Each Thing	Money
1	2 paste brushes	1 cent	
2	2 pencils	2 cents	
3	2 erasers	3 cents	
4	2 cups	4 cents	
5	2 rulers	5 cents	
6	2 tablets	6 cents	
7	2 tubes of paste	7 cents	
8	2 pairs of scissors	8 cents	
9	2 boxes of paints	9 cents	

1. Copy the record. Then fill the money column in your record.

2. Copy and add.

Paste Brushes	Pencils	Erasers	Cups	Rulers
1¢	2¢	3¢	4¢	5¢
1¢	2¢	3¢	4¢	5¢

Tablets	Paste	Scissors	Boxes of Paints
6¢	7¢	8¢	9¢
6¢	7¢	8¢	9¢

1. On page 169 you got the answers by adding. You can get the answers by multiplying. Here are some exercises to help you to find the answers by multiplying. Read each line three or four times.

2 paint brushes at 1¢ each	2 ones	2×1= 2
2 pencils at 2¢ each	2 twos	2×2= 4
2 pen erasers at 3¢ each	2 threes	2×3= 6
2 cups at 4¢ each	2 fours	2×4= 8
2 rulers at 5¢ each	2 fives	2×5=10
2 tablets at 6¢ each	2 sixes	2×6=12
2 tubes paste 7¢ each	2 sevens	2×7=14
2 pairs scissors 8¢ each	2 eights	2×8=16
2 boxes paints 9¢ each	2 nines	2×9=18

2. How much will these things cost?

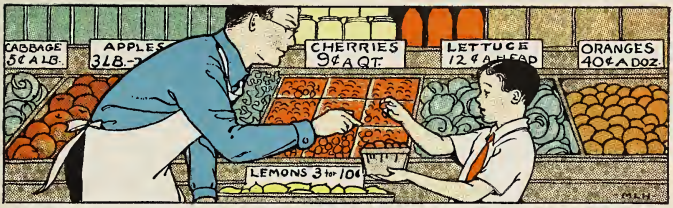
2 tablets at 6 cents each
2 boxes of paints at 9 cents each
2 tubes of paste at 7 cents each
2 pairs of scissors at 8 cents each

3. Write the answers to these examples.

2 sevens =	2 ones =	2 threes =	2 nines =
2 twos =	2 eights =	2 sixes =	2 sevens =
2 nines =	2 fives =	2 fives =	2 nines =

4. Write the products.

2	4	9	7	6	3	5	1	8
2	2	2	2	2	2	2	2	2



Using Multiplication When You Buy

1. Frank paid 9 cents for a quart of cherries. How much must he pay for 2 quarts?

2. A large blue marble costs 2 cents. How much will 9 large blue marbles cost?

3. Tom buys a paper every morning for 2 cents. How much will the papers cost Tom for 3 days?

4. At 3 cents each, how much will 2 papers cost?

5. There are 7 days in a week. How many days are in 2 weeks?

6. How much will 7 two-cent stamps cost?

7. There are 8 pints in a gallon. Each child in the lunchroom gets 1 pint of milk. How many children can be served from 2 gallons of milk?

8. There are 2 pints in a quart. How many pint bottles could I fill with 8 quarts of milk?

9. Willie paid 5 cents for a chocolate bar. How much must he pay for 2 chocolate bars?

10. Colored crayons sell at 2 cents each. How much will 5 crayons cost?

1. Say the answers quickly.

9+8	8×2	7×5	11−4	2+9+7
8−8	0+3	11−2	8×5	17+8+6
2×6	8−0	6×5	11−7	8+8+6
17−9	14−8	14+6+5	2×7	11+5+4
2×9	9×5	15−6	5×4	12+8+4

2. Copy and fill the blanks correctly.

3 fives =	18 = ____ 2's	___×2 = 12	2×___ = 10
5 twos =	20 = ____ 4's	___ 5's = 15	5×___ = 30
2 nines =	12 = ____ 6's	___ 9's = 18	4×___ = 8

3. Multiply each number by 5. Begin 30, 15.

6 3 1 5 7 9 4 8 2

4. Multiply each number by 2. Begin 14, 8.

7 4 3 6 1 9 5 8 2

5. Copy and fill the blanks correctly.

12 = ____ 2's	4×5 =	____×2 = 6	15 = ____ 3's
25 = ____ 5's	2×8 =	____×5 = 30	45 = ____ 5's
14 = ____ 7's	7×5 =	____×2 = 14	30 = ____ 6's

6. See how quickly you can answer these.

3 twos =	3×5 =	seven 5's =	nine 5's =
5×4 =	five 4's =	2×7 =	2×9 =
4 fives =	5×5 =	two 6's =	five 8's =

7. When one number is multiplied by another, what is the answer called?

The School Lunchroom

1. Each half of the school lunchroom has chairs for 32 children. How many pupils can be seated in the room at one time?

To find how many pupils can be seated, multiply 32 by 2. The **multiplier** is 2. It is the **number by which you multiply.**

Under what figure do we write it?

Begin at the right and multiply.

Think, 2 times 2 = 4. Write 4 in the product under the multiplier.

Think, 2 times 3 = 6. Write 6 in the product at the left of 4.

The product is 64.

The lunchroom has seats for 64 pupils.

Check by adding: 32 and 32 = 64.

```
 32
  2
 64

Check
 32
 32
 64
```

The number by which you multiply is the multiplier.

1. For making one ice cream sandwich, 2 large wafers are needed. How many wafers will be needed for making 51 ice cream sandwiches?

Remember, the product of two numbers is always the same. You may multiply by either one. It is easier to multiply by the smaller number.

$$\begin{array}{r} 51 \\ \times\ 2 \\ \hline 102 \end{array}$$

Check

$$\begin{array}{r} 51 \\ +\ 51 \\ \hline \end{array}$$

Find the product of 51 and 2.
Write 2 under the ones' figure of 51.
Begin at the right. Think, 2 times 1 = 2. Write 2 under the multiplier 2.
Think, 2 times 5 = 10. Write 10 with the 0 at the left of 2 in the product.
The product is 102. 102 wafers will be needed for making 51 sandwiches.

Check by adding: 51 + 51 = ____

To multiply a two-figure number by a one-figure number, write the one-figure number under the ones' figure of the other number. Then begin at the right and multiply each figure.

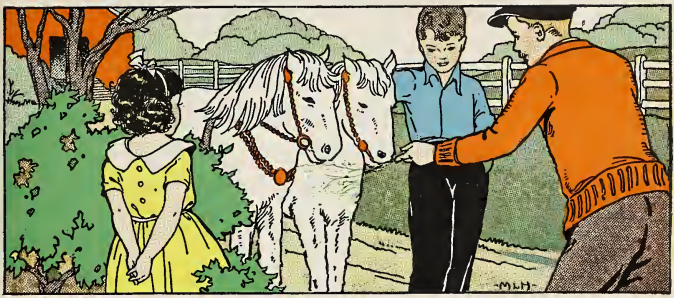
Copy and write the products. Check by adding.

2.

13	33	41	24	11	44	22	21
× 2	× 2	× 2	× 2	× 2	× 2	× 2	× 2
____	____	____	____	____	____	____	____

3.

72	53	64	82	63	71	92	84
× 2	× 2	× 2	× 2	× 2	× 2	× 2	× 2
____	____	____	____	____	____	____	____



1. Alice's brother Paul sold 2 ponies for $91 each. How much money should he receive for them?

2. Clara paid 53 cents each for 2 little white rabbits she bought at Sunnydale Pet Store. How much did she pay for the 2 rabbits?

3. John and Tom each weigh 72 pounds. They stood on the scale together. How much do the 2 boys weigh?

4. How much will 2 toy automobiles cost at 63 cents each?

5. The pupils in our drawing class use 34 sheets of paper in each lesson. How many sheets of paper are needed for two lessons?

6. Shirley Grace was at the seashore 2 months last summer. Each month had 31 days. How many days did she spend at the seashore?

When We Need Multiplication

1. Jack just finished reading 2 books of 123 pages each. How many pages did he read in them?

123
2
246
Check
123
123
246

To find how many pages he read, multiply 123 by 2. Begin at the right.

Think, 2 times 3 = 6. Write 6 in the product under the multiplier 2.

Think, 2 times 2 = 4. Write 4 in the product at the left of 6.

Think, 2 times 1 = 2. Write 2 in the product at the left of 4.

The product is 246. Jack read 246 pages.

Check by adding: 123 and 123 = 246.

2. Mr. Judson took his family to his brother's home to visit. He drove 514 miles each way. How many miles did he drive on this trip?

514
2
1028
Check
514
514

Multiply 514 by 2. Begin at the right.

Think, 2 times 4 = 8. Write 8 in the product under the multiplier 2.

Think, 2 times 1 = 2. Write 2.

Think, 2 times 5 = 10. Tell how we write 10 in the product.

The product is ____. How far did Mr. Judson drive on the trip?

Check by adding: 514 + 514 = ?

Place the right-hand figure of the product under the figure by which you multiply.

Multiply, and check your products.

	A	B	C	D	E	F	G
1.	212 × 2	121 × 2	134 × 2	433 × 2	542 × 2	631 × 2	724 × 2
2.	441 × 2	834 × 2	622 × 2	513 × 2	923 × 2	644 × 2	931 × 2
3.	311 × 2	722 × 2	641 × 2	832 × 2	743 × 2	914 × 2	712 × 2
4.	433 × 2	824 × 2	742 × 2	323 × 2	942 × 2	441 × 2	532 × 2

Write the answers on a folded paper.

5.	(+)	25 + 9	37 + 4	45 + 8	98 + 7	56 + 5	19 + 6	34 + 3
6.	(−)	96 − 8	85 − 6	23 − 6	54 − 7	41 − 3	64 − 9	59 − 4
7.	(×)	52 × 2	52 × 3	512 × 3	212 × 4	122 × 3	221 × 4	134 × 2

8.	−		+		−		+		−		+	
	\$6.54	3.27	\$6.09	2.37	\$3.47	1.29	\$6.28	2.59	\$7.50	2.60	\$5.75	2.67

Add and check.

9.	35	77	89	60	59	96	17	49
	78	64	49	96	31	56	87	35
	56	48	52	33	79	62	46	72

Buying and Selling Things People Need

1. Carl bought 2 boxes of paints at the store for 20 cents each. How much did they cost?

$$\begin{array}{r} 20 \\ \times\ 2 \\ \hline 40 \end{array}$$

To find how much the boxes of paints cost, multiply 20 by 2.

Think, 2 times 0 = 0. Write 0 in the product under the multiplier 2.

Think, 2 times 2 = 4. Write 4 in the product at the left of 0.

$$\begin{array}{r} 20 \\ 20 \\ \hline 40 \end{array}$$

The product is 40. The paints cost 40¢.

Check by adding. $20 + 20 = 40$.

2. John Lee sold 100 bu. of apples on each of 2 days. How many bushels did he sell on the two days?

$$\begin{array}{r} 100 \\ \times\ 2 \\ \hline 200 \end{array}$$

To find how many bushels John Lee sold, multiply 100 by 2.

Think, 2 times 0 = 0. Write 0 in the product under the multiplier 2.

Think, 2 times 0 = 0. Write 0 in the product at the left of 0.

Think, 2 times 1 = 2. Write 2 in the product at the left of the zeros.

$$\begin{array}{r} 100 \\ 100 \\ \hline 200 \end{array}$$

The product is 200. John Lee sold 200 bu.

Check by adding. $100 + 100 = 200$.

No matter how many zeros are to be multiplied, begin at the right and multiply each figure.

1. Copy and write the products. Check.

311 × 2	80 × 2	70 × 2	410 × 2	503 × 2	920 × 2	73 × 2
700 × 2	90 × 2	64 × 2	703 × 2	640 × 2	54 × 2	74 × 2
800 × 2	83 × 2	61 × 2	810 × 2	801 × 2	504 × 2	540 × 2
704 × 2	713 × 2	50 × 2	603 × 2	744 × 2	333 × 2	212 × 2

Read exercises 2 and 3, and say the products.

2. Multiply each number by 2.

4 2 0 5 1 3 6 8 7 9

3. Multiply each number by 5.

6 1 5 7 2 8 4 0 3 9

4. Write products on a folded paper. (2 minutes.)

6 × 2	4 × 2	3 × 2	7 × 2	0 × 2	2 × 6	2 × 3	2 × 4	2 × 7	2 × 0
5 × 3	5 × 7	5 × 2	5 × 4	5 × 1	3 × 5	7 × 5	5 × 0	4 × 5	2 × 5
5 × 7	0 × 2	2 × 4	5 × 0	8 × 5	2 × 7	9 × 5	7 × 2	5 × 6	3 × 5

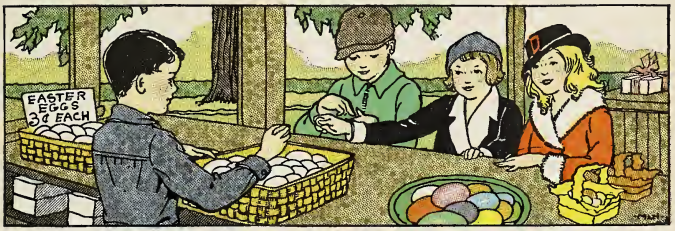
102 × 2	224 × 2	200 × 2	401 × 5	810 × 5	231 × 2

1. Add to find how much these stamps will cost, counting 3¢ for each stamp. Check your answers by looking at the column of figures at the right.

1 stamp costs 3¢	3¢
2 stamps cost 3¢+3¢=6¢	6¢
3 stamps cost 3¢+3¢+3¢=____	9¢
4 stamps cost 3¢+3¢+3¢+3¢=____	12¢
5 stamps cost 3¢+3¢+3¢+3¢+3¢=____	15¢
6 stamps cost 3¢+3¢+3¢+3¢+3¢+3¢=____	18¢
7 stamps cost 3¢+3¢+3¢+3¢+3¢+3¢+3¢=____	21¢
8 stamps cost 3¢+3¢+3¢+3¢+3¢+3¢+3¢+3¢=____	24¢
9 stamps cost 3¢+3¢+3¢+3¢+3¢+3¢+3¢+3¢+3¢=____	27¢

2. In exercise 1 you found the cost by adding. Here is the way to find the cost by multiplying. Read these lines three or four times.

1 stamp costs 3¢	one 3	1 times 3 = 3
2 stamps cost 6¢	two 3's	2 times 3 = 6
3 stamps cost 9¢	three 3's	3 times 3 = 9
4 stamps cost 12¢	four 3's	4 times 3 = 12
5 stamps cost 15¢	five 3's	5 times 3 = 15
6 stamps cost 18¢	six 3's	6 times 3 = 18
7 stamps cost 21¢	seven 3's	7 times 3 = 21
8 stamps cost 24¢	eight 3's	8 times 3 = 24
9 stamps cost 27¢	nine 3's	9 times 3 = 27



Selling Easter Eggs

A few days before Easter, Bob helped in his father's store. He sold Easter eggs at 3¢ each.

1. Bob made a table to help him remember what to charge. Read this table three or four times.

1 egg sells for 3¢	one 3	$1 \times 3 = 3$
2 eggs sell for 6¢	two 3's	$2 \times 3 = 6$
3 eggs sell for 9¢	three 3's	$3 \times 3 = 9$
4 eggs sell for 12¢	four 3's	$4 \times 3 = 12$
5 eggs sell for 15¢	five 3's	$5 \times 3 = 15$
6 eggs sell for 18¢	six 3's	$6 \times 3 = 18$
7 eggs sell for 21¢	seven 3's	$7 \times 3 = 21$
8 eggs sell for 24¢	eight 3's	$8 \times 3 = 24$
9 eggs sell for 27¢	nine 3's	$9 \times 3 = 27$

2. Tell without looking at the table how many cents Bob should get for 4 Easter eggs; 3 eggs; 2 eggs; 9 eggs; 7 eggs; 8 eggs; 6 eggs; 5 eggs. If you cannot tell the right answers quickly, read exercise 1 again.

1. Add by 3's to 30. Say 3 = one 3; 6 = two 3's; 9 = three 3's.

2. Give the answers as quickly as you can.

two 3's =	seven 3's =	$3 \times 3 =$	$4 \times 3 =$
five 3's =	six 3's =	$5 \times 3 =$	$7 \times 3 =$
seven 3's =	eight 3's =	$1 \times 3 =$	$2 \times 3 =$
three 3's =	nine 3's =	$8 \times 3 =$	$9 \times 3 =$
nine 3's =	four 3's =	$6 \times 3 =$	$8 \times 3 =$

3. Copy, and fill the blanks quickly. Remember, 3 feet (ft.) = 1 yard (yd.)

1 yard = ____ feet	2 yd. = ____ ft.
5 yards = ____ feet	9 yd. = ____ ft.
3 yards = ____ feet	4 yd. = ____ ft.
8 yards = ____ feet	7 yd. = ____ ft.
2 yards = ____ feet	6 yd. = ____ ft.

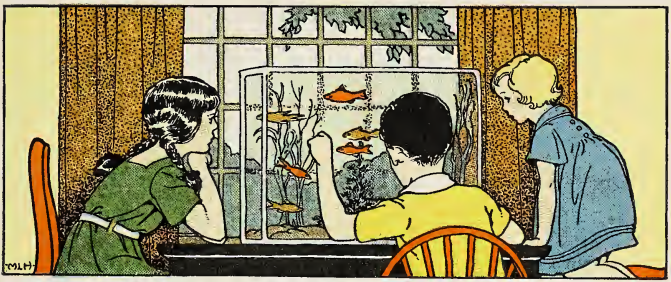
4. Read this exercise until you can give the right answers in one minute.

$6 \times 3 =$	$4 \times 3 =$	$5 \times 3 =$	$9 \times 3 =$	$1 \times 3 =$
$9 \times 3 =$	$8 \times 3 =$	$7 \times 3 =$	$6 \times 3 =$	$7 \times 3 =$
$3 \times 3 =$	$2 \times 3 =$	$4 \times 3 =$	$8 \times 3 =$	$9 \times 3 =$

5. Multiply. Write products on a folded paper.

3	3	3	3	3	3	3	3	3
7	5	3	8	6	4	2	9	1

3	3	3	3	3	3	3	3	3
8	4	7	9	6	8	5	9	7



1. The 10-cent store sold goldfish Saturday for 3 cents each. Ross bought 6 goldfish. How much money did he need to pay for them?

2. The grocery store had a sale of candy bars. They sold all the 5-cent bars for 3 cents each. How much did 5 bars cost? 8 bars? 6 bars?

3. One week Virginia read 3 stories each day. How many stories did she read in the 7 days?

4. Apples are 3 cents each and mother needs 7 apples for pies. How much will the apples cost?

5. Mrs Jones bought 3 pounds of butter 4 times in one month. How many pounds of butter did she buy in that month? Find your answer in two ways, by adding and by multiplying.

6. Joe and Carl live 3 miles apart. Carl walked to Joe's house and back. How many miles did he walk? Show how to get this answer in two ways.

Things Needed by Three Children

1. Susie, Opal, and Jane each need a set of these things. Copy the exercise and add to find how much 3 of each thing will cost.

Paste Brushes	Pencils	Erasers	Cups	Rulers
1¢	2¢	3¢	4¢	5¢
1¢	2¢	3¢	4¢	5¢
1¢	2¢	3¢	4¢	5¢

Tablets	Paste	Scissors	Boxes of Paints
6¢	7¢	8¢	9¢
6¢	7¢	8¢	9¢
6¢	7¢	8¢	9¢

2. It is easier to find the cost of 3 things by multiplying. Read this table several times. The last column will help you to tell quickly the price of 3 things of any one kind.

3 paste brushes at 1¢ each cost 3¢	3 ones	3×1= 3
3 pencils at 2¢ each cost 6¢	3 twos	3×2= 6
3 erasers at 3¢ each cost 9¢	3 threes	3×3= 9
3 cups at 4¢ each cost 12¢	3 fours	3×4=12
3 rulers at 5¢ each cost 15¢	3 fives	3×5=15
3 tablets at 6¢ each cost 18¢	3 sixes	3×6=18
3 tubes paste at 7¢ each cost 21¢	3 sevens	3×7=21
3 pairs scissors, 8¢ each cost 24¢	3 eights	3×8=24
3 boxes paints, 9¢ each cost 27¢	3 nines	3×9=27

1. Copy and write the products.

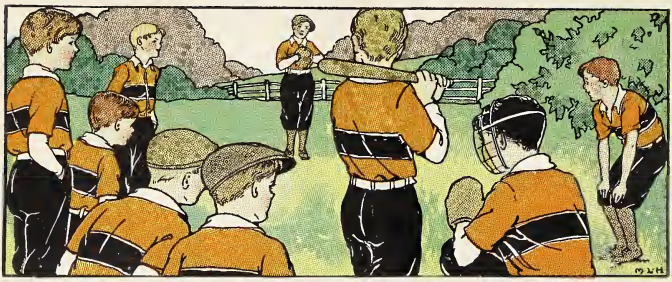
four 3's =	one 3 =	3 ones =
nine 3's =	three 3's =	3 threes =
six 3's =	seven 3's =	3 fours =
five 3's =	3 fives =	3 sixes =
eight 3's =	3 sevens =	3 nines =
two 3's =	3 eights =	3 twos =

2. What examples in exercise 1 have a product of 12? 9? 18? 27? 24? 15? 21?

3. Read, and fill the blanks: The product of two numbers is always the same, no matter which is said first. The product of 3 and 2 is ____, whether we say $3\times$____ or $2\times$____.

4. In the exercise below is given one way of saying that two numbers are to be multiplied. Copy and write the product of the numbers given. Then on the blank space write the other way of saying the numbers to be multiplied. The first example will show you how to do the other examples.

(a)	$3\times2=6$	$3\times7=$	$3\times6=$	$3\times8=$
	$2\times3=6$	____ =	____ =	____ =
(b)	$3\times9=$	$8\times3=$	$9\times3=$	$7\times3=$
	____ =	____ =	____ =	____ =
(c)	$3\times5=$	$4\times3=$	$3\times6=$	$1\times3=$
	____ =	____ =	____ =	____ =



Using Arithmetic in Things We Do

1. A baseball team has 9 boys. How many boys are there on 2 teams? On 3 teams? On 5 teams?

2. Tom worked in a grocery store 8 weeks last summer. He earned $3 a week. How much did he earn working in the grocery store last summer?

3. The tickets for the movies cost 10 cents each. How much will it cost for John, Paul, and Agnes to go to the movies once?

4. Gladys washed dishes for her mother and earned 6 cents a day. How much did she earn in 3 days? In 5 days?

5. The children marched 3 in a row. There were 9 rows. How many children were marching?

6. Fred has two little sisters, Margaret and Anne He gave each of them 3 pennies. How many pennies did he give them?

How Some Children Use Multiplication

1. June, Hazel, and Ella want to see a new picture tonight. The tickets are 20 cents each. How much will their tickets cost?

2. The children were marching down the sidewalk in 3 lines. We counted 53 children in each line. How many children were marching?

3. Last summer Rosalie and her family went to Chicago three times. They drove 230 miles on each trip. How many miles did they drive?

4. John made 102 jumping ropes to sell. A store gave him an order for 3 times that many. How many ropes did the store order?

5. Tom lives on a farm. His father husked 3 loads of corn. He had 42 bushels in each load. How many bushels of corn were in the 3 loads?

Multiply and check by adding.

6.	83	74	31	54	91	33	42
	2	2	5	2	3	3	3
7.	30	61	52	70	32	41	90
	5	5	3	2	3	5	3
8.	700	801	500	640	133	701	604
	5	3	3	2	3	3	2
9.	302	714	401	630	504	602	913
	3	2	5	3	2	3	3

1. See how quickly you can give the answers.

$30-6$	$89-4$	$8+7+9$	5×5	$7+5+6$
3×7	7×3	$46-9$	$16-8$	$17-8$
0×2	$28+5$	$7+9+4$	$43-7$	4×7
$54-6$	3×9	$18+4+6$	9×3	$16+8+2$

2. Copy and write the answers.

3 sevens = 4 twos = 21 = ____ 3's $3\times$____ $=15$

6 threes = 3 fives = 18 = ____ 2's $5\times$____ $=15$

2 eights = 8 threes = 20 = ____ 5's $4\times$____ $=12$

3. Multiply each number by 3. Begin 21, 12.

7 4 3 6 0 1 9 5 8 2

4. Add by 3's to 30. Begin 6 is 2 threes, 9 is 3 threes.

5. Copy this exercise and fill the blanks.

12 = ____ 3's $3\times6=$____ ____$\times4=16$

30 = ____ 5's $8\times3=$____ ____$\times3=27$

16 = ____ 8's $9\times3=$____ ____$\times2=10$

27 = ____ 9's $5\times3=$____ ____$\times5=40$

6. See how quickly you can answer these.

3 threes = $3\times7=$ three 6's = $9\times3=$

5 sixes = $5\times3=$ five 8's = $7\times3=$

nine 3's = $2\times9=$ three 8's = $3\times8=$

7. How many feet are in 3 yards? In 6 yards? In 8 yards? In 9 yards?

Bottling Milk

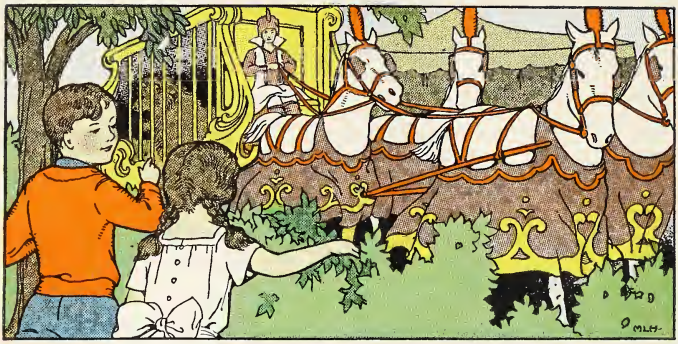
The dairy buys milk by the hundred pounds and sells it by the gallon, quart, and pint. Each gallon will fill 4 quart bottles. How can you find how many quart bottles may be filled from 2 gallons? From 3?

4 quarts = 1 gallon
4 qt. = 1 gal.

1. Read each line of this table three or four times. The right-hand part of the table shows you the products when you multiply 4 by some numbers.

1 gal. fills 4 quarts	one 4	$1 \times 4 = 4$
2 gal. fill 8 quarts	two 4's	$2 \times 4 = 8$
3 gal. fill 12 quarts	three 4's	$3 \times 4 = 12$
4 gal. fill 16 quarts	four 4's	$4 \times 4 = 16$
5 gal. fill 20 quarts	five 4's	$5 \times 4 = 20$
6 gal. fill 24 quarts	six 4's	$6 \times 4 = 24$
7 gal. fill 28 quarts	seven 4's	$7 \times 4 = 28$
8 gal. fill 32 quarts	eight 4's	$8 \times 4 = 32$
9 gal. fill 36 quarts	nine 4's	$9 \times 4 = 36$

2. Tell, without looking at the table, how many quart bottles 4 gallons will fill. 6 gallons. 5 gallons. 7 gallons. 9 gallons. 3 gallons. 2 gallons. 8 gallons. If you cannot tell the answers quickly, read the table again.



1. In the circus parade the animal cages were drawn by 4-horse teams. There were 8 of the cages. How many horses drew the animal cages?

2. Four wheels are needed on each express wagon. How many wheels are needed on 9 wagons?

3. John Arnold spends 4 hours a day selling papers. In 6 days how many hours will he spend in this work?

4. Four pupils can sit at each table in the lunchroom. How many pupils can sit at the 5 tables in the first row?

5. Esther's new shoes cost $4. What will be the cost of 4 pairs of such shoes?

6. Four quarters equal $1. How many quarters equal $8?

7. What will 4 quarts milk cost at 9¢ a quart?

You have learned how to multiply 4 by all the numbers from 1 to 9. Remember when you multiply two numbers, the product will be the same no matter which number comes first.

1. Write these tables and finish the last columns. Remember, $3 \times 4 = 12$ and $4 \times 3 = 12$.

$1 \times 4 = 4$	$4 \times 1 = 4$
$2 \times 4 = 8$	$4 \times 2 =$
$3 \times 4 = 12$	$4 \times \ =$
$4 \times 4 = 16$	$4 \times \ =$
$5 \times 4 = 20$	$4 \times \ =$
$6 \times 4 = 24$	$4 \times \ =$
$7 \times 4 = 28$	$4 \times \ =$
$8 \times 4 = 32$	$4 \times \ =$
$9 \times 4 = 36$	$4 \times \ =$

2. Without looking above, tell the cost of

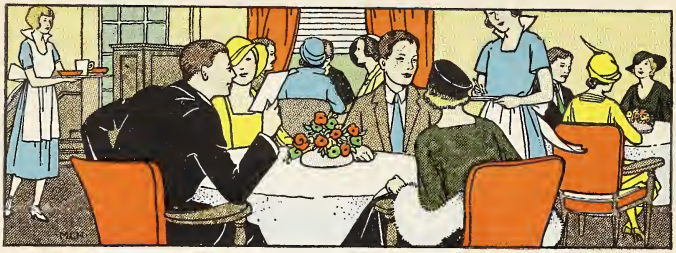
4 erasers at 3¢ each
4 pairs scissors, 8¢ each
4 tablets at 6¢ each
4 rulers at 5¢ each

3. Say the products.

4 sixes =	4 eights =	4 ones =	4 sevens =
4 nines =	4 sevens =	4 nines =	4 twos =
4 fives =	4 threes =	4 fours =	4 eights =

4. Multiply.

7	6	4	8	5	9	3	8	2	9
4	4	4	4	4	4	4	4	4	4



Some Everyday Problems

1. Sunday afternoon 4 people were sitting at each of 8 tables in the Rock Springs restaurant. How many people were sitting at the tables?

2. There are 8 quarts in a peck. How many quarts are in 4 pecks?

3. Dora Smith's mother buys 4 quarts of milk each day. How many quarts does she buy in 7 days?

4. There are 7 days in a week. How many days are in 4 weeks?

5. Mr. Anderson goes to his farm 4 times a week. How many times will he go in 5 weeks?

6. The boys are making 5 toy automobiles. Each automobile needs 4 wheels. How many wheels will be needed?

7. The living room door has 4 rows of glass. Each row has 3 panes of glass. How many panes of glass are in the door?

The first example shows two ways of saying that 4 and 3 have been multiplied together. Read the two ways. Copy exercises 1, 2, and 3 and fill the blanks. Then write the products.

1.	$4\times3=12$ $3\times4=12$	$4\times9=$ $____=$	$4\times8=$ $____=$	$4\times6=$ $____=$
2.	$4\times5=$ $____=$	$6\times4=$ $____=$	$4\times7=$ $____=$	$4\times5=$ $____=$
3.	$7\times4=$ $____=$	$2\times4=$ $____=$	$9\times4=$ $____=$	$4\times6=$ $____=$

Copy these exercises and fill the blanks.

4.	$4\times9=__$	$3\times__=18$	2 nines $=__$
	$5\times7=__$	$__\times 7=28$	7 threes $=__$
	$4\times6=__$	$6\times 4=__$	$__$ nines $=27$
	$3\times9=__$	$9\times__=45$	3 nines $=__$
	$8\times3=__$	$7\times__=21$	6 fours $=__$
	$7\times4=__$	$2\times__=18$	4 sevens $=__$
	$3\times1=__$	$5\times 3=__$	$__$ nines $=45$
5.	$5\times9=__$	6 nickels $=__¢$	$__$ threes $=18$
	$3\times8=__$	$__$ nickels $=35¢$	$__$ fives $=35$
	$2\times7=__$	8 nickels $=__¢$	$__$ sevens $=35$
	$4\times9=__$	2 gal. $=__$ qt.	3 eights $=__$
	$3\times6=__$	$__$ gal. $=28$ qt.	5 sixes $=__$
	$8\times4=__$	3 yd. $=__$ ft.	4 nines $=__$
	$9\times3=__$	$__$ yd. $=21$ ft.	5 eights $=__$

Some Ways People Use Multiplication

1. Paul has a new stamp book. He can put 32 stamps on each page. He has 4 pages filled. How many stamps does he have in the book?

2. Four boys were picking berries. Each picked 11 quarts. How many quarts did they all pick?

3. One freezer of ice cream will serve 32 people. How many people will 4 freezers serve?

Copy. Multiply and check by adding.

	A	B	C	D	E	F	G
4.	32	41	53	72	50	92	20
	4	4	2	3	4	4	5
5.	80	63	51	60	62	81	90
	4	3	5	4	3	4	3
6.	410	401	741	620	302	820	501
	5	3	2	4	4	3	5
7.	101	220	700	902	601	301	920
	4	4	5	2	4	5	4

8. See how quickly you can give the answers.

$18+4+6$	$17-9$	5×6	$15+2+8$
$54-6$	$72-6$	$42-7$	7×4
9×4	4×8	8×2	$15+9+6$
$17+8+5$	$73-8$	3×9	$83-6$
$13+9+7$	4×9	$63-5$	8×4

1. Multiply each number by 3 and add 1. Begin (think 3 times 7 are 21, and 1 are 22), say 22.

7 6 2 9 4 0 8 5 1 3

2. Multiply each number by 4 and add 2. Begin (think 4 times 3 are 12, and 2 are 14), say 14.

3 2 6 5 0 7 1 8 4 9

3. Multiply each number by 5 and add 3.

8 4 1 3 5 9 0 7 2 6

4. Multiply and then add.

$2\times4+1=9$

Multiply 2 times 4 and add 1. Think, 8 and 1 more are 9. Say 8, 9.

$2\times6+1=$	$3\times9+2=$	$2\times8+3=$	$4\times8+3=$
$5\times3+2=$	$4\times8+3=$	$6\times4+1=$	$6\times2+1=$
$7\times2+3=$	$6\times7+1=$	$9\times5+3=$	$7\times5+2=$
$6\times4+2=$	$5\times7+3=$	$3\times7+2=$	$4\times8+1=$

5. Read and say the correct numbers.

__2's = 8	__3's = 21	2 sevens +1 =	six	4's +2 =
__5's = 25	__2's = 16	4 threes +2 =	nine	3's +1 =
__3's = 12	__5's = 45	2 fours +3 =	eight	5's +2 =
__4's = 24	__4's = 32	3 fives +1 =	three	2's +3 =

6. Multiply each of these numbers by 2, by 5, by 4, and by 3, and add 1 to each product.

3 5 4 7 2 6 8 9

Using Multiplication in Our Work

1. John sells 26 quarts of milk to the grocery every day. How many quarts of milk does he sell there in 3 days?

Find 3 times 26 quarts.

```
 26
  3
 78

Check
 26
 26
 26
 78
```

Write 3 under the ones' figure of 26.
Begin at the right. 3 times 6 = 18.
Write the 8 under 3 and remember 1.
3 times 2 = 6; 6 and 1 remembered = 7.
Write 7 at the left of 8 in the product.
The product is 78.
John sells 78 quarts of milk to the grocery in 3 days.
Check by adding.

2. Roger's brother earns $117 a month. How much does he earn in 2 months?

Find 2 times 117.

```
117
  2
234
```

Begin at the right. 2 times 7 = 14
Write the 4 under 2 and remember 1.
Say the steps to finish the problem.
Roger's brother earns $234 in 2 months.
Check by adding.

When the product of two numbers is more than 9, write the ones' figure of that product in its place. Remember the tens' figure and add it to the product of the next numbers.

Buying and Selling Furniture

1. A piano dealer paid $352 each for 2 pianos. How much did the pianos cost?

```
352
  2
704

Check
352
352
704
```

To find the cost, multiply 2×352.

Write 2 under the ones' figure of 352.

Begin at the right. 2 times 2 = 4. Write 4 in the product under the 2.

2 times 5 = 10. Write 0 at the left of 4 in the product. Remember 1.

2 times 3 = 6; 6 and 1 remembered = 7. Write 7 in the product at the left of 0.

The product is 704. The pianos cost $704. Check by adding.

2. Emery's Furniture Store bought 3 bedroom sets at $148 each. How much did the sets cost?

```
148
  3
444

Check
148
148
148
444
```

To find the cost, multiply 3×148.

Write 3 under the ones' figure of 148.

Begin at the right. 3 times 8 = 24. Write the 4 under 3. Remember 2.

3 times 4 = 12; 12 and 2 remembered = 14. Write 4 at the left of 4 in the product. Remember 1.

3 times 1 = 3; 3 and 1 remembered = 4. Write 4 in the product.

The product is 444. The sets cost $444. Check by adding.

1. The children watched when the parade passed. There were 4 equal lines, with 103 boys in each line. How many boys were in the parade?

To find how many passed, multiply 103 by 4.
Write 4 under the ones' figure of 103.
Begin at the right. Think, 4 times 3 = 12.
Write the 2 under 4. Remember 1.
Think, 4 times 0 = 0; 0 and 1 = 1.
Write 1 in the product.
Think, 4 times 1 = 4. Write 4.
There were 412 boys in the parade.

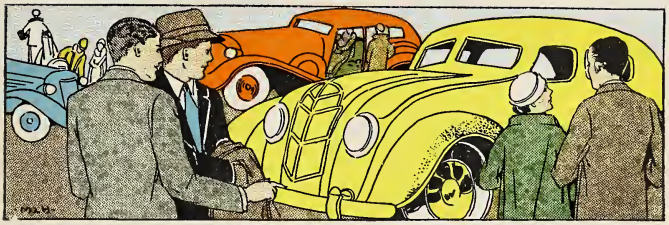
$$\begin{array}{r} 103 \\ \times\ 4 \\ \hline 412 \end{array}$$

Copy and multiply carefully. Then check.

2. 209×5 400×2 806×5 960×4 205×9 540×3 204×7

If you made any mistakes, find the products again.

Any number times zero equals 0.
Zero times any number equals 0.



1. Mr. James bought a new car in Detroit. He drove it 208 miles to his home. The next week he drove back to Detroit and then drove home. How many miles did he drive on these trips?

To find how many miles he drove, multiply 208 by 3. Write 3 under ____ of 208.

```
208
  3
624
```

Begin at the ____ to multiply.
Think, 3 times 8 = ____ Write 4 under ____.
Remember the 2.
Think, 3 times 0 = ____; 0 and 2 = 2
Write 2 at the left of ____ in the product.
Think, 3 times 2 = ____. Write 6.
Mr. James drove 624 miles on these trips.

Copy these examples and multiply carefully. Then check each product.

2.

407	207	400	600	704	410	730
7	4	8	3	9	6	8

If you made mistakes, find the products again.

Always read × by saying "times." Read these exercises and say the answers.

1.

12 = __ 6's	__ 5's in 30	16 = 4 × __	3 × 0 =
15 = __ 5's	__ 4's in 16	35 = 7 × __	1 × 7 =
20 = __ 4's	__ 2's in 18	24 = 8 × __	0 × 7 =

Read and say the answers quickly.

2.

two 4's =	5 yd. = __ ft.	3 sevens =
five 4's =	6 ft. = __ yd.	five 9's =
three 4's =	9 ft. = __ yd.	6 fives =
four 4's =	8 yd. = __ ft.	eight 2's =
nine 4's =	6 yd. = __ ft.	4 sevens =

3.

14 = __ 2's	20 = 5 × __	__ 4's in 16
16 = __ 8's	45 = 9 × __	__ 3's in 27
21 = __ 7's	12 = 4 × __	__ 8's in 24

4. Say the answers quickly. Watch the signs.

8 × 4 =	23 − 7 =	7 × 5 =	64 + 9 =
5 × 6 =	17 − 9 =	3 × 8 =	27 + 0 =
16 − 8 =	0 × 4 =	18 + 5 =	6 × 0 =
14 + 7 =	15 + 8 =	3 × 0 =	33 − 0 =

5. Multiply and add as quickly as you can.

8 × 2 + 1 =	7 × 2 + 3 =	7 × 0 + 2 =	8 × 3 + 2 =
3 × 7 + 2 =	8 × 0 + 2 =	3 × 8 + 2 =	0 × 8 + 3 =
3 × 8 + 2 =	3 × 3 + 3 =	7 × 2 + 3 =	6 × 4 + 2 =

KNOWING THAT YOU KNOW

Test 1

Say the sums. Read from left to right.

23 + 4 =	34 + 5 =	46 + 6 =	53 + 5 =	62 + 7 =
25 + 6 =	37 + 6 =	47 + 7 =	54 + 8 =	65 + 8 =
28 + 5 =	37 + 7 =	49 + 4 =	58 + 9 =	63 + 9 =

In each line below write the four numbers in figures in a column, and add. Check your sums.

Seventy-two, thirteen, six, ninety.
One hundred nineteen, twenty-four, eighty, ten.
Forty-nine, ninety-one, three, two hundred eight.

Test 2

Say the remainders in these subtraction examples.

13	14	14	15	15	17	16	13	16	13
9	8	5	6	8	8	7	4	9	8

Subtract and check remainders. Do not copy.

43	94	114	152	603	444	922
8	6	25	47	513	389	823

Test 3

Add. Check your sums. Do not copy.

324	540	348	920	634	307	829	227
708	694	749	230	567	685	926	998
172	435	183	417	382	453	876	534

A Test

Read each problem carefully. Tell whether to add, subtract, or multiply. Tell why.

1. There are 35 seats for pupils in the third grade room. When pupils are using only 27 of the seats, how many are not in use?

2. In the fourth grade room there are 5 rows of 8 seats each. How many seats are in that room?

3. Each locker in the hall has 3 coat hooks in it. How many coat hooks are in 23 lockers?

4. In Barbara's garden there are 74 red roses, 68 yellow roses, and 39 pink roses. How many roses of these three kinds are in the garden?

5. Billy's father sells tricycles. At $7 each how much should he get for 3 tricycles?

6. A tricycle has 3 wheels. How many wheels are there on 8 tricycles?

7. Two gloves make a pair. How many gloves are in 6 pairs?

8. Tom has saved $19. How much more money does he need to buy a suit of clothes that costs $27?

9. How much will 200 postage stamps cost at 3 cents each?

10. The Marconi school has 800 pupils, and the Edison school has 647 pupils. Which school is larger? How much larger is it?

KNOWING THAT YOU KNOW

Write the products on a folded paper.

Test 1. Multiplying Easy Numbers

6	9	8	7	8	6	9	6	5	8
2	3	2	4	4	4	4	3	4	5

23	21	34	41	43	12	11	32
2	4	2	3	2	4	5	3

Test 2. Multiplying Longer Numbers

241	532	212	321	422	643	732	411
2	3	4	3	4	2	3	5

213	343	221	211	312	322	432	234
2	2	2	5	3	4	3	2

Test 3. Multiplying Numbers Having 0

20	10	30	60	70	90	40	50
4	5	2	3	4	2	4	3

200	300	202	603	610	740	403	601
2	3	4	3	4	2	3	5

Test 4. Some Products More Than 9

273	709	426	819	409	216	630	846
4	3	3	2	3	4	5	4

600	947	135	261	440	478	428	789
4	2	4	3	5	5	2	3

If you made mistakes in any test on this page, work the exercise of the same number on page 204.

HELPING YOU TO KNOW

Write the products on a folded paper.

Exercise 1. Multiplying Easy Numbers

8	6	8	6	5	8	9	9	6	7
4	3	5	2	4	2	4	3	4	4
11	43	32	12	23	34	21	41		
5	2	3	4	2	2	4	3		

Exercise 2. Multiplying Longer Numbers

321	234	213	411	241	432	532	211
3	2	2	5	2	3	3	5
343	212	732	422	312	221	643	322
2	4	3	4	3	2	2	4

Exercise 3. Multiplying Numbers Having 0

60	50	70	30	40	20	90	10
3	3	4	2	4	4	2	5
601	610	403	300	603	740	200	202
5	4	3	3	3	2	2	4

Exercise 4. Some Products More than 9

819	428	216	600	789	135	440	846
2	2	4	4	3	4	5	4
273	261	409	630	709	947	478	426
4	3	3	5	3	2	5	3

CHAPTER 6

LEARNING TO DIVIDE NUMBERS

Dividing by 2

1. John sells apples for 2 cents each. How many apples should he sell to Mary for 10 cents?

Think how many 2's are in 10.

This is **dividing.** Write it

10=____ 2's or

10 divided by 2=?

There are five 2's in 10.

John should sell 5 apples to Mary for 10 cents.

2. This table helped John know how many 2-cent things he should give for each of the amounts of money. Read the table three or four times.

2¢ buys 1 apple	2 divided by 2 = 1
4¢ buys 2 apples	4 divided by 2 = 2
6¢ buys 3 apples	6 divided by 2 = 3
8¢ buys 4 apples	8 divided by 2 = 4
10¢ buys 5 apples	10 divided by 2 = 5
12¢ buys 6 apples	12 divided by 2 = 6
14¢ buys 7 apples	14 divided by 2 = 7
16¢ buys 8 apples	16 divided by 2 = 8
18¢ buys 9 apples	18 divided by 2 = 9

1. Count to 18 by 2's. Say 2, one 2; 4, two 2's; 6, three 2's.

2. Without looking at the table on page 205, tell how many apples at 2 cents each you can buy for 12 cents. For 8 cents. For 18 cents. 6 cents. 14 cents. 4 cents. 16 cents. 10 cents.

When you learned to multiply 5 times 2, you found that $5 \times 2 = 10$. Now you are learning to divide 10 by 2 to see how many 2's are in 10. You just measure 10 by 2.

3. A shorter way to write 10 divided by 2 is **$10 \div 2$**. The sign of division is $\div$ and it is read by saying **divided by**. Read $14 \div 2$.

4. Read each of these **division examples** and fill the blanks by saying the numbers that are needed.

$12 \div 2 = 6$	12 divided by 2 equals 6
$8 \div 2 =$ __	__ divided by 2 equals 4
$10 \div 2 =$ __	10 divided by __ equals 5
$6 \div - = 3$	6 divided by 2 equals __

5. Write the answers to these examples.

$10 \div 2 =$	$8 \div 2 =$	18 = __ 2's	10 = __ 2's	$2 \div 2 =$
$6 \div 2 =$	$18 \div 2 =$	6 = __ 2's	8 = __ 2's	$16 \div 2 =$
$12 \div 2 =$	$4 \div 2 =$	14 = __ 2's	2 = __ 2	$12 \div 2 =$

We divide to see how many times one number is found in another number.

1. Another way to write $10 \div 2$ is $2\overline{)10}$

$2\overline{)10}$ is read {**10 divided by 2 = ?** / **How many 2's in 10?**}

2. Read these division examples two ways.

$2\overline{)10}$ $2\overline{)14}$ $2\overline{)6}$ $2\overline{)8}$ $2\overline{)4}$ $2\overline{)12}$ $2\overline{)2}$

3. These examples show you where to write the division answer.

3
$2\overline{)6}$

This example is read {6 divided by 2 = ? / How many 2's in 6?}
The answer is 3. It is written above the line over 6.
It shows that there are three 2's in 6.

5
$2\overline{)10}$

Read this example. The answer is 5.
5 is written above the line over 0 of 10.
What does the 5 show?

4. Copy the examples in exercise 2 and write the answers as they should be.

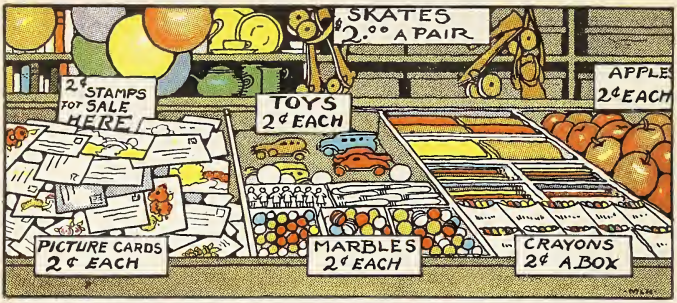
The answer in a division example is the quotient.

See how quickly you can say the **quotients.**

5.

8 divided by 2 =	$12 \div 2 =$	$2\overline{)16}$
16 divided by 2 =	$10 \div 2 =$	$2\overline{)14}$
18 divided by 2 =	$6 \div 2 =$	$2\overline{)4}$

6. How many 2's are in 10? How many 2's are in 12? How many 2's are in 18? In 4?



Boys and Girls Buying Things

1. Edward paid 18 cents for some toys at 2 cents each. How many toys did he get?

2. Charles has 14 cents. At 2 cents each, how many marbles can he buy?

3. Kenneth bought apples at 2 cents each. He bought 8 cents worth. How many apples did he buy?

4. Edna went to the store with 10 cents. How many picture cards could she buy at 2 cents each?

5. How many 2-cent stamps can you buy for 12 cents?

6. Jane paid 6 cents for colored crayons at 2 cents a package. How many packages of the crayons could she buy?

7. Last Saturday Mr. Brink sold 16 dollars worth of boys' skates at 2 dollars a pair. How many pairs did he sell that day?

Buying Postage Stamps

1. The United States Post Office sells postage stamps of more than one kind for letters and packages. Read the exercise below and answer the questions that are asked.

At 1¢ each, how many stamps can you buy for 2¢?
At 2¢ each, how many stamps can you buy for 4¢?
At 3¢ each, how many stamps can you buy for 6¢?
At 4¢ each, how many stamps can you buy for 8¢?
At 5¢ each, how many stamps can you buy for 10¢?
At 6¢ each, how many stamps can you buy for 12¢?
At 7¢ each, how many stamps can you buy for 14¢?
At 8¢ each, how many stamps can you buy for 16¢?
At 9¢ each, how many stamps can you buy for 18¢?

2. Here are some tables that will help you. Read them carefully.

2 = two 1's
4 = two 2's
6 = two 3's
8 = two 4's
10 = two 5's
12 = two 6's
14 = two 7's
16 = two 8's
18 = two 9's

$2 \div 1 = 2$
$4 \div 2 = 2$
$6 \div 3 = 2$
$8 \div 4 = 2$
$10 \div 5 = 2$
$12 \div 6 = 2$
$14 \div 7 = 2$
$16 \div 8 = 2$
$18 \div 9 = 2$

1. Tell how many of each of these things you can buy for the money named.

Tubes of paste at 7 cents, for 14 cents
Tubes of paste at 9 cents, for 18 cents
Pairs of scissors at 8 cents, for 16 cents
Tablets at 6 cents, for 12 cents
Cups at 4 cents, for 8 cents

2. Copy and fill in blank spaces.

4 = ____ 2's	12 = ____ 6's	14 = ____ 7's
8 = ____ 4's	2 = ____ 1's	10 = ____ 5's
6 = ____ 3's	16 = ____ 8's	18 = ____ 9's

3. Copy and write the quotients quickly.

$6 \div 3 =$	$18 \div 9 =$	$16 \div 8 =$	$5\overline{)10}$	$8\overline{)16}$
$8 \div 4 =$	$2 \div 1 =$	$12 \div 6 =$	$9\overline{)18}$	$7\overline{)14}$
$14 \div 7 =$	$10 \div 5 =$	$4 \div 2 =$	$6\overline{)12}$	$9\overline{)18}$

Division to Find How Many

4. At 2 cents each, how many tops can you buy for 14 cents?

5. How many loaves of bread can you buy for 14 cents if each loaf costs 7 cents?

6. John paid 18 cents for marbles at 2¢ each. How many did he buy?

7. Alice gave 18 Easter eggs to her cousins. She gave each cousin 9 of the eggs. To how many cousins did Alice give the eggs?

How Children Find Half of Anything

1. How many squares are in each half of the chocolate bar in the picture? In the whole bar?

2. Divide a string 10 inches long into halves. How long is each half?

One-half of 10 inches is ____ inches.

5 in. + 5 in. = ____ in.

A short way of writing one-half is $\frac{1}{2}$.

3. Use your ruler and pieces of string to find

$\frac{1}{2}$ of 4 inches = ____ inches	$\frac{1}{2}$ of 12 in. = ____ in.
$\frac{1}{2}$ of 8 in. = ____ inches	$\frac{1}{2}$ of 16 in. = ____ in.
$\frac{1}{2}$ of 14 in. = ____ in.	$\frac{1}{2}$ of 10 in. = ____ in.
$\frac{1}{2}$ of 6 in. = ____ in.	$\frac{1}{2}$ of 18 in. = ____ in.

4. Patsy had 12 jacks. She played with one-half of them. With how many did she play?

$\frac{1}{2}$ of 12 = 6

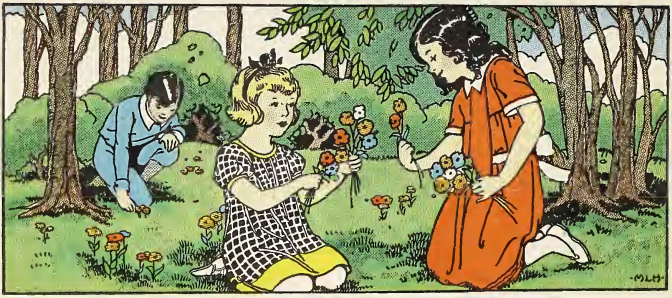
$$2\overline{)12}\quad 6$$

To see how many jacks Patsy played with, find $\frac{1}{2}$ of 12. $2 \times$ ____ $= 12$.

Divide 12 by 2. $12 \div 2 = 6$.

Patsy played with 6 jacks.

To find $\frac{1}{2}$ of a number, divide the number by 2. Use division to find a part of a number.



In the Springtime

1. Esther, Sue, and John went for a long drive in the country with their parents. The children picked flowers in their uncle's woods. They had 16 flowers of one kind. The two girls shared the flowers equally. How many did each girl have?

2. Near a town some children were flying kites. John counted 14 kites in the air. About half of the kites were red and the rest were white. How many are one-half of 14 kites?

3. On a road sign near the edge of the next town the children read, **Crawford 18 miles.** Their father drove halfway from the sign to Crawford. Then they turned and started home. How far from Crawford were they at that time?

4. The children had 12 sandwiches. They ate one-half of the sandwiches in the woods and the rest on the way home. How many are one-half of 12?

1. Frances made paper cups for her party. For each cup she needed 2 pieces of green paper. She used 24 pieces. How many cups did Frances make?

$$2\overline{)24}\quad 12$$

To find how many she made, divide 24 by 2.
Think: How many 2's in 2? One 2.
Write 1 in the quotient over 2 of 24.
Think: How many 2's in 4? Two 2's.
Write 2 in the quotient over 4 of 24.
The quotient is 12.

Frances made 12 paper cups.

2. There are 264 pages in John's book of travel stories. How many pages must be read to finish one-half of the book? Divide 264 by 2.

$$2\overline{)264}\quad 132$$

How many 2's in 2? 1. Write 1 over the 2 of 264.
How many 2's in 6? ____ Write 3 over 6.
How many 2's in 4? ____ Write 2 over 4.
The quotient is 132. John must read 132 pages to finish one-half of the book.

3. Copy and find the quotients.

$2\overline{)26}$	$2\overline{)64}$	$2\overline{)42}$	$2\overline{)62}$	$2\overline{)28}$	$2\overline{)84}$
$2\overline{)244}$	$2\overline{)464}$	$2\overline{)862}$	$2\overline{)486}$	$2\overline{)228}$	$2\overline{)426}$

The number by which we divide is called the divisor.

1. There were 126 children at the picnic. They had two long tables. Half of the children ate at each table. How many children ate at each table?

Divide 126 by 2. Begin at the left.

$$\begin{array}{r} 63 \\ 2\overline{)126} \end{array}$$

The **divisor 2** is more than the first figure 1, so take two figures to divide.

How many 2's in 12? Write 6 in the quotient over 2 of 12.

How many 2's in 6? Write 3 in the quotient over the 6 of 126.

The quotient is 63.

There were 63 children at each table.

2. Mr. Rogers and his brother were paid $184 for the apples they sold. They divided the money equally between them. How much did each one get?

Divide 184 by 2, or find $\frac{1}{2}$ of 184.

$$\begin{array}{r} 92 \\ 2\overline{)184} \end{array}$$

You know the divisor 2 is more than 1. What do you take for the first division?

How many 2's in 18? Write 9 over the 8.

How many 2's in 4? Write 2 over 4.

The quotient is 92. Each one received $92.

3. Divide: $2\overline{)124}$ $2\overline{)162}$ $2\overline{)128}$ $2\overline{)166}$ $2\overline{)188}$

To divide a number begin at the left. Divide all the figures in the number. Put each quotient figure over the last figure you divided.

How Paul Solved His Problem

1. Paul went to the store for some lemons. He had 15¢. How many lemons could he buy?

Paul thought, 3¢ will buy 1 lemon, 6¢ will buy 2, 9¢ will buy 3, 12¢ will buy 4, 15¢ will buy 5.

He bought 5 lemons for 15¢.

2. Paul went home and made this table.

Read the table carefully. Look at it to see how many 3's are in any of these numbers.

3¢ will buy 1 lemon	3 = one 3	3 ÷ 3 = 1
6¢ will buy 2 lemons	6 = two 3's	6 ÷ 3 = 2
9¢ will buy 3 lemons	9 = three 3's	9 ÷ 3 = 3
12¢ will buy 4 lemons	12 = four 3's	12 ÷ 3 = 4
15¢ will buy 5 lemons	15 = five 3's	15 ÷ 3 = 5
18¢ will buy 6 lemons	18 = six 3's	18 ÷ 3 = 6
21¢ will buy 7 lemons	21 = seven 3's	21 ÷ 3 = 7
24¢ will buy 8 lemons	24 = eight 3's	24 ÷ 3 = 8
27¢ will buy 9 lemons	27 = nine 3's	27 ÷ 3 = 9

How the Boys and Girls Used Division

1. Tell how many apples at 3¢ each you can buy for 12¢, 27¢, 15¢, 9¢, 21¢, 18¢, 6¢. Look in the table on page 215 and check your answers.

Copy these examples and see if you can put in the answers without looking at the table.

2.

$9 \div 3 =$	$6 \div 3 =$	$21 \div 3 =$
$15 \div 3 =$	$18 \div 3 =$	$24 \div 3 =$
$12 \div 3 =$	$27 \div 3 =$	$3 \div 3 =$

3. Jerry had 12¢ with which to buy cup cakes at 3¢ each. How many cup cakes could he buy?

4. At 3¢ each, how many candy bars can Mary buy with 6¢? With 12¢? With 24¢?

5. If Joan can earn 3¢ a day, how many days will it take her to earn 18¢? 27¢?

6. There are 27 children on the playgrounds. The teacher divided them into groups of three each for games. How many groups of children were on the playground?

7. Jack learns 3 new words a day for spelling. How many days will it take him to learn 21 new words?

8. John paid 18 cents for 3-cent stamps. How many 3-cent stamps can you buy for 18 cents?

9. Frank and Joe hiked 15 miles at 3 miles an hour. How many hours did the hike take?

Making Equal Shares

1. Take a piece of paper 9 inches long. Cut it into 3 equal parts. How long is each part? Each part is called **one-third.** How many thirds are in the paper? How long is each third?

One-third of 9 inches is 3 inches.

3 in. + 3 in. + 3 in. = 9 in.

2. Joe, Fred, and Albert had 27 old stamps. Each boy took $\frac{1}{3}$. How many did each boy take?

To find the answer divide 27 by 3.

$3\overline{)27}$ 9

Think: 27 divided by 3 = 9. Write 9 over 7 of 27.

The quotient is 9.

Each boy took 9 stamps.

To find $\frac{1}{3}$ of a number, divide by 3.

3. See how quickly you can give the answers. Read each line from left to right across the page.

4 + 4 + 4 =	3 × 4 =	three 4's =
6 + 6 + 6 =	3 × 6 =	three 6's =
7 + 7 + 7 =	3 × 7 =	three 7's =
12 ÷ 3 =	$\frac{1}{3}$ of 12 =	
18 ÷ 3 =	$\frac{1}{3}$ of 18 =	
21 ÷ 3 =	$\frac{1}{3}$ of 21 =	

4. Copy and find the quotients.

$3\overline{)21}$ $3\overline{)12}$ $3\overline{)18}$ $3\overline{)24}$ $\frac{1}{3}$ of 15 = ____

Using Division in Things We Do

Divide by 3 in the same way you divide by 2.

	A	B	C	D	E
1.	$3\overline{)63}$	$3\overline{)96}$	$3\overline{)123}$	$3\overline{)186}$	$3\overline{)936}$
2.	$3\overline{)156}$	$3\overline{)129}$	$3\overline{)363}$	$3\overline{)183}$	$3\overline{)396}$
3.	$3\overline{)189}$	$3\overline{)273}$	$3\overline{)216}$	$3\overline{)243}$	$3\overline{)279}$
4.	$3\overline{)246}$	$3\overline{)219}$	$3\overline{)213}$	$3\overline{)366}$	$3\overline{)276}$
5.	$3\overline{)126}$	$3\overline{)99}$	$3\overline{)273}$	$3\overline{)669}$	$3\overline{)933}$

6. Uncle Frank drove his car 693 miles in 3 days. If he drove $\frac{1}{3}$ of the distance each day, how far did he drive each day?

7. It is 126 feet from the street to our garage door. How many yards is 126 feet? Remember, 3 ft. = 1 yd.

8. Julia has a new string of yellow, pink, and green beads. She has the same number of beads of each color. There are 159 beads. How many beads of each color does she have?

You have learned two uses for division.

(1) To find how many of one number there is in another number.

(2) To find a part of a number.

Which one of these uses is found in problem 6? In problem 7? In 8?

1. When tomatoes are 4 cents a pound, how many pounds can you buy for 12 cents? $12 \div 4 = ?$

2. Count to 40 by 4's. Begin 4 = one 4, 8 = two 4's, 12 = three 4's.

3. Read these examples several times.

$4 \div 4 = 1$	$16 \div 4 = 4$	$28 \div 4 = 7$
$8 \div 4 = 2$	$20 \div 4 = 5$	$32 \div 4 = 8$
$12 \div 4 = 3$	$24 \div 4 = 6$	$36 \div 4 = 9$

4. How many pints of milk at 4¢ each can you buy for 20¢? 28¢? 16¢? 32¢?

5. Write the answers.

16 = ____ 4's	32 = ____ 4's	20 = ____ 4's	$4\overline{)36}$
4 = ____ 4's	8 = ____ 4's	12 = ____ 4's	$4\overline{)28}$
36 = ____ 4's	24 = ____ 4's	28 = ____ 4's	$4\overline{)24}$

6. Read the table below. Say the answers as you read. The first line is finished to show you how. Do you see that each example is written in 4 ways?

			3
12 divided by 4 = 3	$12 \div 4 = 3$	12 = three 4's	$4\overline{)12}$
8 divided by 4 =	$8 \div 4 =$	8 = ____ 4's	$4\overline{)8}$
16 divided by 4 =	$16 \div 4 =$	16 = ____ 4's	$4\overline{)16}$
36 divided by 4 =	$36 \div 4 =$	36 = ____ 4's	$4\overline{)36}$
28 divided by 4 =	$28 \div 4 =$	28 = ____ 4's	$4\overline{)28}$
24 divided by 4 =	$24 \div 4 =$	24 = ____ 4's	$4\overline{)24}$
20 divided by 4 =	$20 \div 4 =$	20 = ____ 4's	$4\overline{)20}$

1. Donna's grandmother had 12 pennies. She gave 4 pennies to each of her grandchildren. How many grandchildren did she have?

2. Bill paid 20 cents for oranges at 4 cents each. How many did he buy?

3. How many 4-cent candy bars can you buy for 16 cents? How many for 24 cents?

4. Mary wants 32 cents to spend at the school fair. If she gets 4 cents a day for washing dishes, in how many days can she earn 32 cents?

5. Ned's Uncle Dick earns $4 a day. How many days will it take him to earn $36?

6. The dog and pony show had 32 dogs. There were 4 dogs in each group, playing tricks. How many groups of dogs were playing tricks in the show?

7. Four quarters equal a dollar. How many dollars do 28 quarters equal?

1. How many fourths are in one apple? A piece of paper? A yard of cloth? A gallon of milk?

2. Anne had 24 colored pictures of birds. She took $\frac{1}{4}$ of them to school. How many are $\frac{1}{4}$ of 24?

To find $\frac{1}{4}$ of a number, divide by 4.

3. Tell what is $\frac{1}{4}$ of

8 books	24 pages	12 balloons
16 pencils	36 inches	28 dollars
4 gallons	32 quarts	20 quarts

4. Copy and find the quotients.

$4\overline{)16}$ $4\overline{)32}$ $4\overline{)28}$ $4\overline{)24}$ $4\overline{)36}$ $4\overline{)12}$ $4\overline{)20}$

5. Copy and write the quotients.

16 = ____ 4's	28 = ____ 4's	32 ÷ 4 = ____
36 = ____ 4's	12 = ____ 4's	24 ÷ 4 = ____
20 = ____ 4's	24 = ____ 4's	36 ÷ 4 = ____
32 = ____ 4's	8 = ____ 4's	16 ÷ 4 = ____

Remember how you divided long numbers by 2 and by 3. Divide by 4 in the same way.

1. James saves $\frac{1}{4}$ of what he earns as messenger boy for the telegraph company. In June and July he earned \$48. How many dollars did he save?

2. On St. Valentine's day one ice cream company made 248 bricks of fancy ice cream and delivered them equally to 4 drug stores to be sold. How many bricks did each drug store get?

3. There were 284 boys at Burket Camp at one time last summer. Every 4 boys had a tent. How many tents were needed for the boys?

Find the quotients.

	A	B	C	D	E
4.	$4\overline{)288}$	$4\overline{)124}$	$4\overline{)168}$	$4\overline{)284}$	$4\overline{)244}$
5.	$4\overline{)324}$	$4\overline{)248}$	$4\overline{)164}$	$4\overline{)128}$	$4\overline{)88}$
6.	$4\overline{)288}$	$4\overline{)448}$	$4\overline{)488}$	$4\overline{)204}$	$4\overline{)484}$
7.	$4\overline{)848}$	$4\overline{)208}$	$4\overline{)364}$	$4\overline{)368}$	$4\overline{)328}$

Buying Tickets to the Show

1. Tickets for the children's show are 5 cents each. How many tickets can you buy for 10 cents?

2. Count to 45 by 5's. Begin 5, one 5; 10, two 5's.

3. Read this table several times.

$5 \div 5 = 1$	$20 \div 5 = 4$	$35 \div 5 = 7$
$10 \div 5 = 2$	$25 \div 5 = 5$	$40 \div 5 = 8$
$15 \div 5 = 3$	$30 \div 5 = 6$	$45 \div 5 = 9$

4. How many 5-cent tickets can you buy for 15 cents? 30 cents? 45 cents? 35 cents? 20 cents?

5. Copy these examples and write the answers.

25 = ____ 5's	$10 \div 5 =$ ____	30 = ____ 5's	$5\overline{)5}$
30 = ____ 5's	$35 \div 5 =$ ____	15 = ____ 5's	$5\overline{)20}$
20 = ____ 5's	$40 \div 5 =$ ____	45 = ____ 5's	$5\overline{)40}$

6. Read this table. Say the right words to fill blank spaces. The first line shows you how.

			4
20 divided by 5 = 4	$20 \div 5 = 4$	20 = four 5's	$5\overline{)20}$
35 divided by 5 =	$35 \div 5 =$	35 = ____ 5's	$5\overline{)35}$
15 divided by 5 =	$15 \div 5 =$	15 = ____ 5's	$5\overline{)15}$
30 divided by 5 =	$30 \div 5 =$	30 = ____ 5's	$5\overline{)30}$
45 divided by 5 =	$45 \div 5 =$	45 = ____ 5's	$5\overline{)45}$
25 divided by 5 =	$25 \div 5 =$	25 = ____ 5's	$5\overline{)25}$
40 divided by 5 =	$40 \div 5 =$	40 = ____ 5's	$5\overline{)40}$

1. Edna divided a long piece of ribbon equally among 5 girls. What part of the ribbon did each girl have?

2. Mr. Lane had 15 pennies. He gave each of his 5 children $\frac{1}{5}$ of them. How many pennies did each child have? Make a picture to show that one-fifth of 15 cents = ____ cents.

To find $\frac{1}{5}$ of a number, divide by 5.

3. Tell what is $\frac{1}{5}$ of

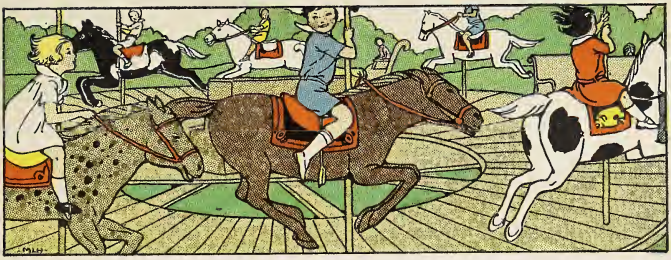
10 books	35 blocks	30 inches
45 pennies	15 yards	40 dollars

4. See if you can give the answers quickly.

$5 \times 7 =$	$\frac{1}{5}$ of $35 =$	$35 \div 5 =$	$35 =$ ____ 5's
$5 \times 9 =$	$\frac{1}{5}$ of $45 =$	$45 \div 5 =$	$45 =$ ____ 5's
$5 \times 4 =$	$\frac{1}{5}$ of $20 =$	$20 \div 5 =$	$20 =$ ____ 5's
$5 \times 8 =$	$\frac{1}{5}$ of $40 =$	$40 \div 5 =$	$40 =$ ____ 5's

5. Copy and find the quotients.

$5\overline{)15}$	$5\overline{)30}$	$5\overline{)45}$	$5\overline{)25}$	$5\overline{)10}$
$5\overline{)40}$	$5\overline{)5}$	$5\overline{)35}$	$5\overline{)20}$	$5\overline{)35}$



1. Children's tickets on the merry-go-round cost 5 cents each. For how many children will 40 cents buy tickets?

2. Fred went to the post office with 30 cents. How many 5-cent stamps could he buy?

3. How many nickels are there in 45 cents?

4. How many nickels are there in 25 cents? What part of 25 cents is one nickel?

5. The milkman can carry 20 bottles in his two racks. There are 5 bottles in each row. How many rows are there?

6. Sue's mother has 35 oranges and her 5 children get 1 orange each for breakfast every morning. How many days will the oranges last?

7. Joe earned enough money in 5 weeks to buy a bicycle that cost 30 dollars. If he earned the same amount of money each week, how much money did he earn in one week?

KNOWING THAT YOU KNOW

1. Read until you can give the answers quickly.

$40-30$	$14-7$	$11+9+4$	$32-8$	$40\div5$
6×5	9×2	$18+6+5$	$14\div2$	7×5
$20\div5$	$16\div2$	$14+6+8$	$25\div5$	8×2
$85-7$	7×2	$13+8+9$	$15\div5$	$20\div5$
$17-9$	$31-8$	$12+8+9$	$54-7$	$48-9$

2. Copy and write the answers.

15 divided by 5 = $\quad 6\times5=\quad 5\overline{)20}\quad 45\div5=$

12 divided by 2 = $\quad 9\times5=\quad 2\overline{)12}\quad 25\div5=$

10 divided by 5 = $\quad 5\times9=\quad 2\overline{)18}\quad 14\div2=$

3. Divide each number by 2. Begin 4, 7, 8.

8 14 16 10 12 18 4 2

4. Divide each of these numbers by 5.

10 25 45 15 30 40 35 20 5

5. Copy and write the answers.

$14=$____ 2's $\quad 12\div2=\quad 5\div5=\quad 30=$____ 5's

$18=$____ 2's $\quad 16\div2=\quad 15\div5=\quad 16=$____ 2's

$40=$____ 5's $\quad 2\div2=\quad 25\div5=\quad 35=$____ 5's

6. See if you can answer all these quickly.

4 fives = $\quad 5\times4=\quad 6\div2=\quad 8$ fives =

3 twos = $\quad 2\times3=\quad 2\div2=\quad 2$ sevens =

6 fives = $\quad 4\times5=\quad 4\div4=\quad 6$ fives =

KNOWING THAT YOU KNOW

1. Read until you can give the answers quickly.

$18 \div 3 =$	$14 - 8 =$	$72 - 9 =$	$3 \div 3 =$
$6 \times 5 =$	$20 \div 5 =$	$27 \div 3 =$	$3 \times 7 =$
$7 + 8 =$	$36 + 4 =$	$20 =$ __ 4's	$3 \times 9 =$
$54 - 6 =$	$35 =$ __ 5's	$64 + 6 =$	$4 \times 6 =$
$9 \times 4 =$	$55 + 4 =$	$4 \times 8 =$	$9 \div 3 =$

2. Copy and write the answers.

12 divided by 4 =	$6 \times 4 =$	$4\overline{)36}$	$27 \div 3 =$
25 divided by 5 =	$3 \times 9 =$	$3\overline{)36}$	$32 \div 4 =$
15 divided by 3 =	$4 \times 7 =$	$3\overline{)24}$	$24 \div 4 =$

3. Divide each of these numbers by 3.

6 15 9 21 27 24 18 12 3

4. Divide each of these numbers by 4.

16 8 24 12 28 4 32 20 36

5. Copy and write the quotients.

$27 \div 3 =$	$4\overline{)32}$	$12 =$ ____ 3's	$24 =$ ____ 3's
$32 \div 4 =$	$3\overline{)27}$	$24 =$ ____ 4's	$28 =$ ____ 4's
$18 \div 3 =$	$4\overline{)16}$	$18 =$ ____ 3's	$27 =$ ____ 3's

6. See if you can answer all these quickly.

$16 =$ ____ 4's	$3 \times 7 =$	$24 \div 4 =$	two 4's =
$32 =$ ____ 4's	$4 \times 8 =$	$18 \div 3 =$	six 3's =
$15 =$ ____ 3's	$3 \times 4 =$	$36 \div 4 =$	eight 4's =

KNOWING THAT YOU KNOW

In each problem tell whether to add, subtract, multiply, or divide. Then answer the question.

1. Tom's brother gets $250 a month. How much will he get in 4 months?

2. Beverly has one-third as many dolls as Ann. Ann has 12 dolls. How many has Beverly?

3. Last week our school had 643 pupils present on Monday, 652 on Tuesday, 635 on Wednesday, 649 on Thursday, and 647 on Friday. What is the difference between the largest number and the smallest number present on any of these days?

4. In five games our baseball team made these runs: 8, 15, 4, 0, 12. How many runs did the team make in these games?

5. The pupils in the parade marched 5 in a row and there were 48 rows. How many pupils marched?

6. The first week in September Joe sold 24 copies of The Saturday Evening Post. The second week he sold 36 copies. The third week he sold 6. The fourth week he sold 23. How many of these magazines did Joe sell in September?

7. There are 655 pupils in our school. Five hundred seventy-nine of them were at the school picnic? How many pupils were not at the picnic?

KNOWING THAT YOU KNOW

1. Read until you can give the answers quickly.

$19-15=$	$12=__\ 3$'s	$13-2=$	$10-3=$
$8=__\ 2$'s	$15-4=$	$2\times8=$	$8\div2=$
$4\times6=$	$3\times7=$	$4\times9=$	$10\div5=$
$4\times8=$	$20-18=$	$14\div2=$	$15-12=$

2. Read and give the remainders.

11	10	9	8	11	11	13	12	9
8	7	2	3	9	4	8	7	5
17	14	15	13	15	34	17	33	25
8	6	8	7	9	8	9	5	6

3. Read and give the products.

$2\times3=$	$7\times2=$	$2\times9=$	$4\times3=$	$4\times2=$
$3\times5=$	$3\times4=$	$6\times2=$	$7\times3=$	$5\times5=$
$6\times4=$	$4\times8=$	$5\times9=$	$4\times7=$	$1\times0=$
$2\times8=$	$3\times7=$	$5\times4=$	$2\times4=$	$3\times3=$

4. Read and fill in blank spaces.

$16=__\ 2$'s	$12=__\ 4$'s	$20=__\ 5$'s	$15=__\ 5$'s
$24=__\ 3$'s	$8=__\ 2$'s	$27=__\ 3$'s	$18=__\ 3$'s
$14=__\ 7$'s	$9=__\ 3$'s	$36=__\ 4$'s	$24=__\ 4$'s

5. Read and give the quotients.

$8\div2=$	$35\div5=$	$18\div2=$	$45\div5=$	$14\div2=$
$12\div3=$	$16\div2=$	$24\div4=$	$20\div5=$	$18\div3=$
$20\div4=$	$15\div3=$	$6\div2=$	$21\div3=$	$27\div3=$

CHAPTER 7

MORE MULTIPLYING

6's in Multiplication

1. Find the cost of 6 bunches of celery at 6¢ a bunch. Add six 6's.

2. Find the cost of 7 bunches. Add seven 6's.

3. What will 8 bunches cost? 9 bunches?

4. Copy and fill in blank spaces.

$9 \times __ = 54$	$7 \times __ = 42$	$6 \times 6 = __$
$__ \times 6 = 36$	$9 \times 6 = __$	$6 \times __ = 36$
$7 \times 6 = __$	$__ \times 6 = 42$	$8 \times __ = 48$
$36 = __ \times 6$	$9 \times __ = 54$	$8 \times 6 = __$

5. Find the cost of 6 tablets at 7 cents each. Add six 7's. How many are 6 times 7?

6. Copy and fill in blank spaces.

$6 \times __ = 54$	$36 = __ \times 6$	$6 \times 8 = __$
$__ \times 8 = 48$	$__ \times 7 = 42$	$6 \times __ = 42$
$6 \times 7 = __$	$6 \times 9 = __$	$8 \times __ = 48$
$9 \times __ = 54$	$__ \times 6 = 36$	$6 \times 6 = __$

7. Copy these tables and fill the blanks.

$1 \times 6 = 6$	$5 \times 6 = 30$
$2 \times 6 = 12$	$6 \times 6 = 36$
$3 \times 6 = 18$	$7 \times 6 = 42$
$4 \times 6 = 24$	$8 \times 6 = 48$
$9 \times 6 = 54$	

$6 \times 1 = __$	$6 \times __ = __$
$6 \times 2 = __$	$6 \times __ = __$
$6 \times 3 = __$	$6 \times __ = __$
$6 \times 4 = __$	$6 \times __ = __$
$6 \times 9 =$	

1. How many days are in 1 week? In 3 weeks?

2. How many days are there in 7 weeks? Add 7 seven times.

seven 7's = __ $7 \times 7 = 49$ 7 weeks = __ days

3. Find the number of days in 8 weeks. 9 weeks.

4. Add by 7's to 70. Begin 7 = one 7.

5. Copy and fill in blank spaces.

$9 \times __ = 63$	$8 \times __ = 56$	$8 \times 7 = __$
$__ \times 7 = 49$	$9 \times 7 = __$	$__ \times 7 = 56$
$8 \times 7 = __$	$__ \times 7 = 63$	$9 \times __ = 63$
$56 = __ \times 7$	$7 \times __ = 49$	$7 \times 7 = __$

6. How much will 7 boxes of crayons cost at 8¢ a box? Add 8 seven times.

7. How much will 7 tablets cost at 9¢ each? Add 9 seven times.

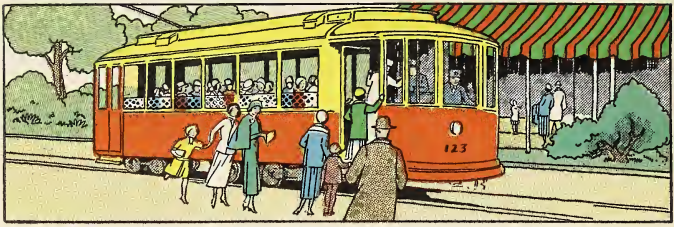
8. Copy and fill in blank spaces.

$7 \times __ = 56$	$__ \times 8 = 56$	$7 \times 7 = __$
$__ \times 9 = 63$	$7 \times 9 = __$	$7 \times __ = 28$
$7 \times 8 = __$	$9 \times __ = 63$	$__ \times 7 = 42$
$7 \times __ = 49$	$8 \times __ = 56$	$3 \times 7 = __$

9. Copy these tables and fill the blanks.

$1 \times 7 = 7$	$5 \times 7 = 35$
$2 \times 7 = 14$	$6 \times 7 = 42$
$3 \times 7 = 21$	$7 \times 7 = 49$
$4 \times 7 = 28$	$8 \times 7 = 56$
$9 \times 7 = 63$	

$7 \times 1 = __$	$7 \times __ = __$
$7 \times 2 = __$	$7 \times __ = __$
$7 \times 3 = __$	$7 \times __ = __$
$7 \times 4 = __$	$7 \times __ = __$
$7 \times 9 = __$	



Do you remember how to multiply when some of the products are more than 9?

1. Multiply by 7, and add 2 to each product.

3 8 4 9 2 7 1 5 6

2. Multiply the above numbers by 6, and add 2.

3. Dick's father is a street car conductor. One day the car carried 720 people. At 7 cents each, how much was the fare for these people?

4. An airplane that flies 176 miles an hour will fly how far in 6 hours?

Multiply.

5.	745 × 6	394 × 7	293 × 6	606 × 7	627 × 6	539 × 6
6.	870 × 7	915 × 6	760 × 7	294 × 6	481 × 7	735 × 7
7.	695 × 6	609 × 6	231 × 7	569 × 7	905 × 7	457 × 7

How Will and Fred Helped

1. Will carried 8 men's lunches every day for 9 days. How many lunches did he carry? Add nine 8's.

$9 \times 8 = 72$. He carried ____ lunches.

2. Add by 8's to 80. Say 8 = one 8, 16 = two 8's.

3. Fred picked 9 quarts of berries each day for 9 days. How many quarts did he pick? Add nine 9's.

$9 \times 9 = 81$. He picked ____ quarts.

4. Add by 9's to 90. Say 9 = one 9, 18 = two 9's.

5. Copy and fill in blank spaces.

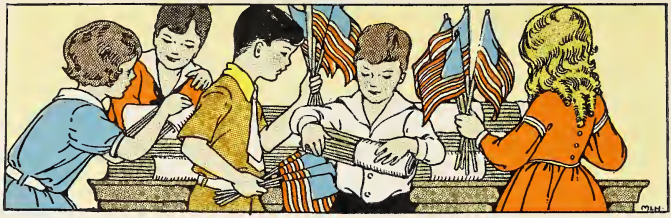
$9 \times __ = 72$	$8 \times __ = 64$	$8 \times 8 = __$
$__ \times 8 = 64$	$9 \times 9 = __$	$__ \times 9 = 36$
$9 \times 8 = __$	$__ \times 9 = 54$	$9 \times __ = 27$
$__ \times 9 = 81$	$7 \times __ = 63$	$8 \times 4 = __$

6. How much will 9 kites cost at 9¢ each?

7. Copy these tables and finish them.

$1 \times 8 = 8$	$8 \times 1 = 8$
$2 \times 8 = 16$	$8 \times 2 = 16$
$3 \times 8 = 24$	$8 \times 3 =$
$4 \times 8 = 32$	$8 \times \ =$
$5 \times 8 = 40$	$8 \times \ =$
$6 \times 8 = 48$	$8 \times \ =$
$7 \times 8 = 56$	$8 \times \ =$
$8 \times 8 = 64$	$8 \times \ =$
$9 \times 8 = 72$	$8 \times \ =$

$1 \times 9 = 9$	$9 \times 1 = 9$
$2 \times 9 = 18$	$9 \times 2 = 18$
$3 \times 9 = 27$	$9 \times 3 =$
$4 \times 9 = 36$	$9 \times \ =$
$5 \times 9 = 45$	$9 \times \ =$
$6 \times 9 = 54$	$9 \times \ =$
$7 \times 9 = 63$	$9 \times \ =$
$8 \times 9 = 72$	$9 \times \ =$
$9 \times 9 = 81$	$9 \times \ =$



1. Multiply each of the following numbers by 9 and add 2 to each product.

7 4 6 3 1 9 2 5 8

2. Multiply the same numbers by 8 and add 3.

3. The children were getting ready for a flag drill. They had 37 bundles of 8 flags each. How many flags did they have? $(37 \times 8 = 8 \times 37)$.

4. Mr. Star put 9 peaches in each basket. How many peaches did he put in 38 baskets?

Multiply.

	A	B	C	D	E	F	G
5.	435 × 8	437 × 9	508 × 9	176 × 9	265 × 9	274 × 8	907 × 8
6.	628 × 8	218 × 8	849 × 8	612 × 8	963 × 9	407 × 9	573 × 8
7.	251 × 9	482 × 9	806 × 8	921 × 8	604 × 9	435 × 8	364 × 9

KNOWING THAT YOU KNOW

See if you can do the work in all of these exercises without a mistake. Check your answers.

Copy and add.

1.	280	780	306	870	489	868	637
	739	362	745	321	559	460	477
2.	81	85	77	57	64	97	339
	79	25	39	23	56	89	49
	48	17	36	39	18	48	867
	29	55	29	35	67	34	37

Write these numbers in columns and add them.

3. 248, 89, 446, 283
4. 613, 917, 53, 4
5. 16, 183, 95, 462
6. 570, 97, 586, 9

Subtract.

	A	B	C	D	E	F	G
7.	248	570	613	203	142	191	136
	89	97	94	99	84	93	86
8.	952	708	874	969	524	758	936
	180	360	370	390	168	258	707
9.	446	586	917	781	714	520	440
	283	429	453	522	359	501	239

10.	1418	1380	1023	2561	3364	5472
	839	378	746	786	1739	2695

KNOWING THAT YOU KNOW

Write the products on a folded paper.

Test 1. Multiplying Easy Numbers

7	5	8	7	6	9	7	9	8
9	3	9	6	8	6	7	8	7
23	42	64	72	61	83	51	71	
3	2	2	3	4	2	9	8	

Test 2. Multiplying Numbers Having 0

10	30	70	60	300	900	210
9	4	5	6	7	5	7
401	705	810	601	703	806	509
8	3	3	8	3	6	9

Test 3. Multiplying Larger Numbers

231	350	460	571	462	780	425
7	4	6	8	3	9	5
237	398	273	456	364	645	738
6	3	7	8	4	9	7

If you made mistakes in any of these tests, work the exercise of the same number on page 237. If you made no mistakes, skip page 237.

Three Things to Help You

Know all the products of two one-figure numbers.
Watch the zeros.
Add the remembered number in products more than 9.

HELPING YOU TO KNOW

Write the products on a folded paper.

Exercise 1. Multiplying Easy Numbers

8	6	7	7	7	8	5	9	9
9	8	7	6	9	7	3	8	6

51	72	71	42	83	23	61	64
9	3	8	2	2	3	4	2

Exercise 2. Multiplying Numbers Having 0

60	703	401	900	509	810	10
6	3	8	5	9	3	9

601	210	30	705	300	70	806
8	7	4	3	7	5	6

Exercise 3. Multiplying Larger Numbers

462	645	460	398	231	780	738
3	9	6	3	7	9	7

237	425	350	273	571	364	456
6	5	4	7	8	4	8

Length

12 inches = 1 foot
12 in. = 1 ft.
3 feet = 1 yard
36 in. = 1 yd.

Liquids

2 pints = 1 quart
2 pt. = 1 qt.
4 quarts = 1 gallon
4 qt. = 1 gal.

Dozen

12 things = 1 dozen (doz.)
6 things = 1 half dozen ($\frac{1}{2}$ doz.)

Time

60 minutes = 1 hour
60 min. = 1 hr.
24 hours = 1 day
7 days = 1 week
365 days = 1 year

United States Money

10 cents = 1 dime
10 dimes = 1 dollar
5 dimes = 1 half-dollar
50 cents = 1 half-dollar
5 cents = 1 nickel

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